



MILCOR

ARCHITECTURAL SHEET METAL GUIDE

MILWAUKEE

MILCOR STEEL COMPANY

FORMERLY

MILWAUKEE CORRUGATING COMPANY

AND

THE S. L. F. MANUFACTURING COMPANY

MILWAUKEE, WISCONSIN · CANTON, OHIO

CHICAGO, ILL. · LACROSSE, WIS.

KANSAS CITY, MO.

MILWAUKEE, WIS.

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MILCOR
ARCHITECTURAL
SHEET METAL GUIDE

A Reference Book

on Milcor Architectural Sheet Metal Products

including

“Titelock” Metal Tile and Shingles

Roof Trimmings, Ornamental Gutters

Ventilators and Skylights

Ornamental Cornices

Marquees or Canopies

“Invisible Joint” Metal Ceilings

Zinc and Copper Architectural Ornaments

Catalog No. 24-A

MILWAUKEE CORRUGATING COMPANY
MILWAUKEE, WISCONSIN

LOUIS KUEHN, *President and Treasurer*

A. J. LUEDKE, *Secy. and Asst. Treas.*

Chicago, Ill.

4301 So. Western Avenue Blvd.

Kansas City, Mo.

Southwest Blvd. & “B” St.

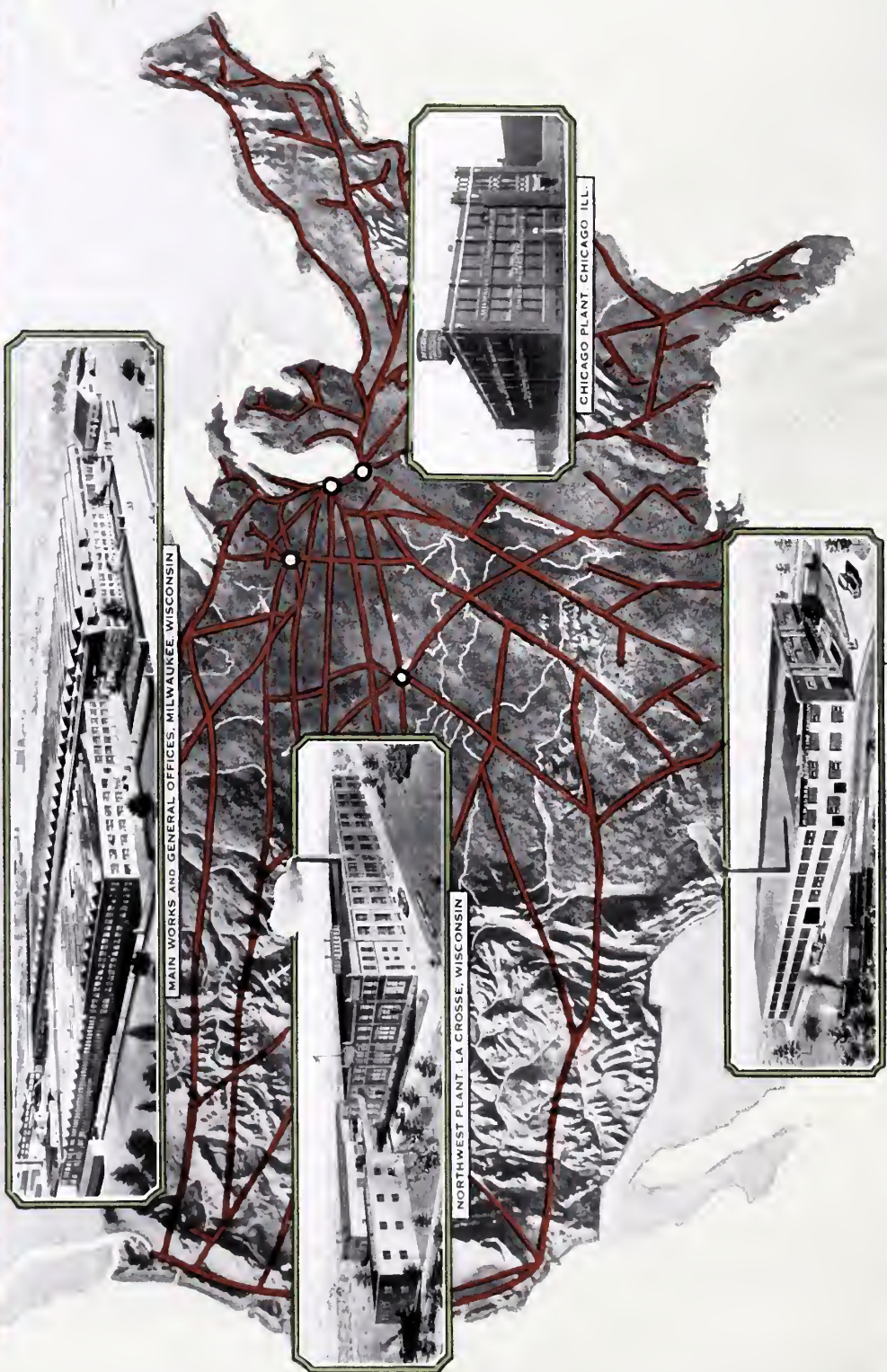
LaCrosse, Wis.

2530 South Ave.

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INDEX ON LAST PAGE

SPEEDY, DIRECT SERVICE TO ALL TERRITORIES



90% of Our Orders are Shipped within 24 Hours after Receipt

The MILCOR ARCHITECTURAL SHEET METAL GUIDE *“—for the Good of the Building”*

Beauty *plus* Firesafeness

TO the Architectural profession and the Building Trade in general, the importance of building for firesafeness has assumed the proportions of a profound duty. Each year *preventable* fires snuff out thousands of lives. Every four minutes some dwelling burns — every seven minutes fire destroys some farm building. Fifteen hotels, five schools, five churches and a hospital are included in the average *daily toll* of fire. More than a half billion dollars annually is the loss through these ravages of fire.

Without the slightest sacrifice to architectural beauty, thousands of lives and many millions of dollars can be saved every year by specifying Milcor Art Metal Roofings and other Milcor Products.

Experience has demonstrated to many Architects, Engineers, Contractors, Carpenters, Dealers, and others, that the excellence represented in Milcor Architectural Sheet Metal is something which cannot be purchased through dollars and cents competition.

Such excellence is no accident. It is the result of years of effort, proper application of experience, adequate equipment, and highest manufacturing ideals.

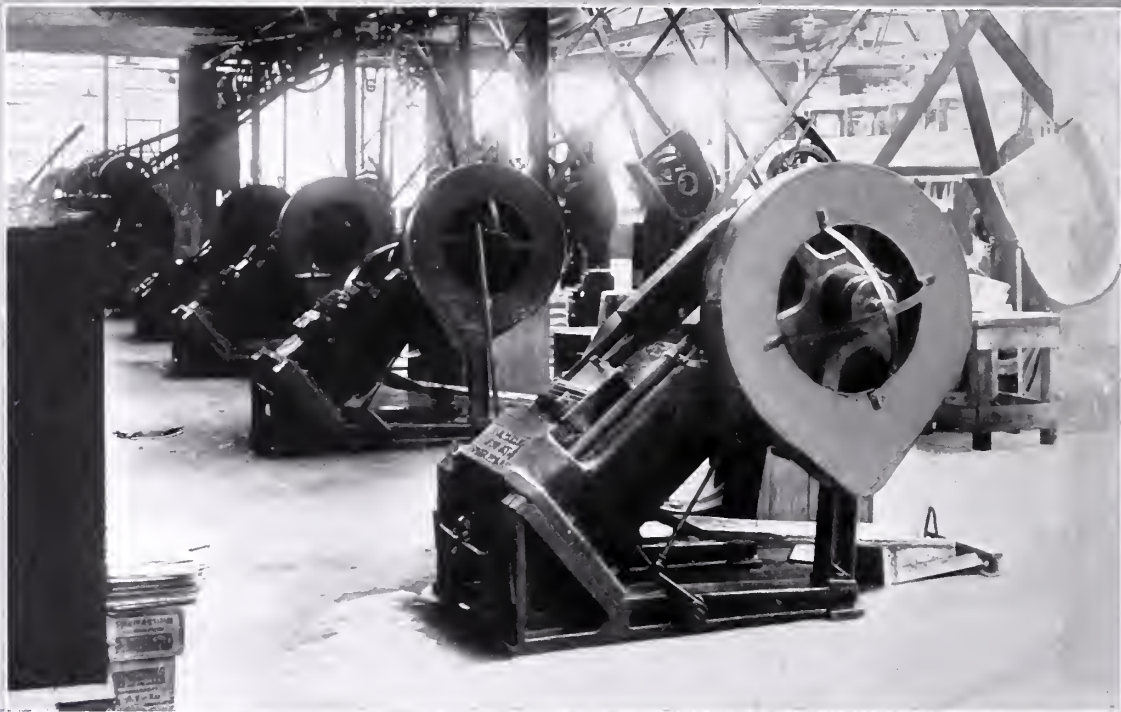
From the standpoint of beauty and propriety, as well as economy and endurance, Milcor Metal Tile, Shingles, Ceilings, Cornices, Skylights, Ornaments, etc., thoroughly deserve the broad recognition accorded them by Architects and Builders.

Architectural Specifications are outlined throughout various sections of this Data Book, covering the application of the products under discussion. At any time, the Milcor Engineering Division will be pleased to submit “lump-sum” estimates or “Quantity Surveys” on any portions of a building involving possible use of Milcor Products. No obligation whatsoever. Make use of this service.

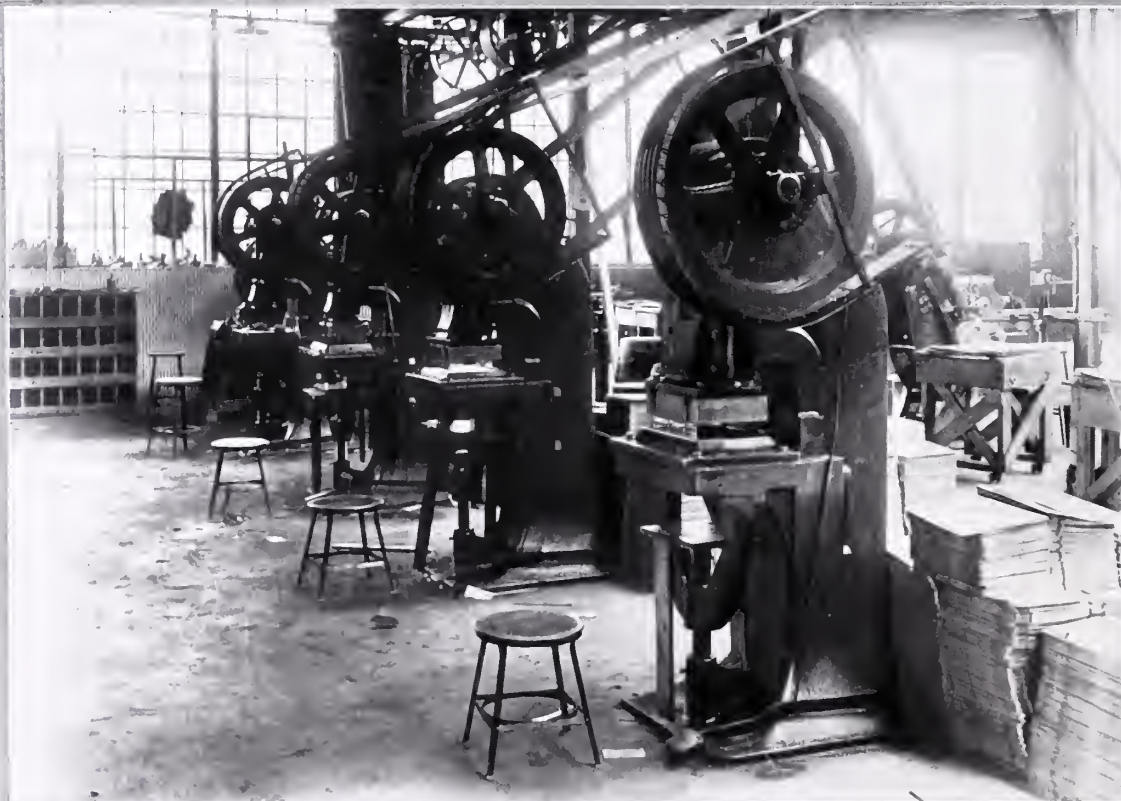


President

Milwaukee Corrugating Company



THESE BATTERIES OF PONDEROUS PRESSES
HAVE PRODUCED MILLIONS OF
MILCOR "TITELOCK" METAL TILES, SHINGLES AND SLATE



"**TITELOCK**", the Secret of *MILCOR* Metal Roof Superiority

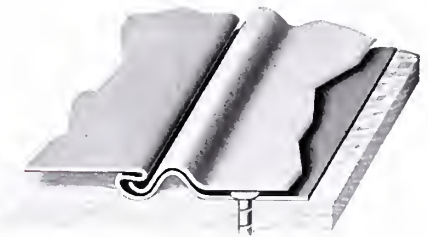


Starting at the left, lower corner of the roof, the first row is laid to a chalk line. After inserting the flange (on the left edge of the tile or shingle) into the slot on the right edge of the preceding tile or shingle, an inseparable **LOCK** occurs—a tight joint through which no water or moisture can work its way. When the Titelock roof is laid, there is no possibility of joints separating.

Notice the end caps on the "Starter Tile" in the bottom row to the left. These Starter Tile are furnished complete, as shown. The end caps, instead of being soldered, are seamed tightly to the tile, thus making leakage impossible.



Any mechanic can lay Titelock roofs. No special tools are required—ordinary Tinner's Snips, hammer and nails are sufficient. No solder necessary—the efficiency of the Titelock feature obviates the use of solder at any joints. A carpenter can ordinarily lay Titelock faster than wooden shingles.



Every nail hole and nail head is completely covered when the next Titelock unit to the right is connected and laid flat in its proper place. Not a single spot is exposed for water to get through.



The ribs at the top of each Titelock unit effectively prevent backing-up of melting snow or water under the roof. Leakage induced by capillary attraction is impossible here. Rain or snow cannot be driven in under the metal surface at any point.

THE complete "Titelock" line in Milcor Metal Roofing includes the following units: Spanish Metal Tile; American Metal Tile; Art Metal Shingles (in three styles); Metal Slate, and suitable Metal Trimmings for each type.

In all of these units the Titelock feature is embodied. This unique sidelock is the detail that makes Milcor Metal Tile, Shingles and Slate so successful.

Fire Safeness Reduces Insurance

Red hot sparks, burning embers or firebrands, falling on Milcor Metal Roofs, fade away and die without causing the slightest damage. Lightning, too, is rendered harmless—is shunted off and carried down into the ground by Milcor Conductor Pipes and rain spouts. Lightning gets no chance to wreck buildings thus protected.

The facts pertaining to the fire-and-lightning resistance of metal roofs have been so definitely established that lower insurance rates now apply on metal-roofed buildings. In most localities 25% to 40% is saved.

Economy and Permanence

Ordinarily, light wood sheathing is sufficient for Titelock Roofs. Their light weight does not demand heavy, special structural work throughout the building as some heavy tile roofings do. First cost is low—upkeep expense can be disregarded entirely because these permanent metal roofs cannot crack, break, warp, curl or rot—and their extreme durability also contributes to the fact that, in terms of service, these are the most economical roofs known.



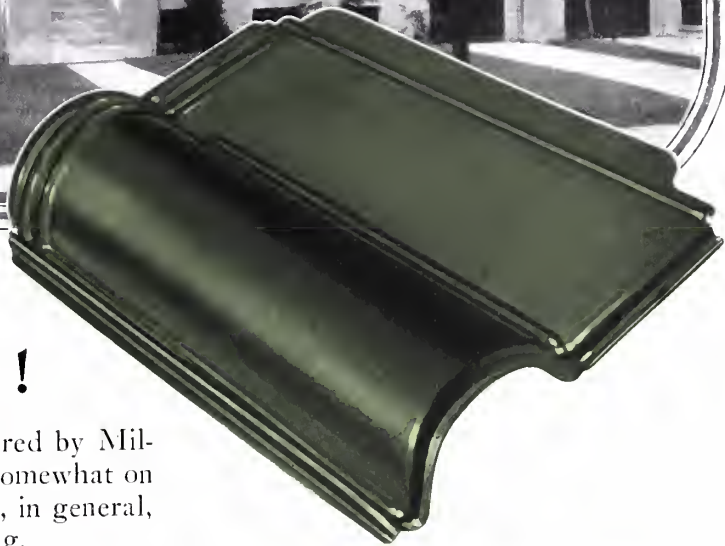
Beautiful!

TO the rare beauty and charm of that quaint, heavily-ribbed tile of old Spain, add the practical advantages of metal, plus the weather-baffling "Titelock" design. The result is Milcor Spanish Metal Tile, the most practical adaptation of this popular architectural motif in roofing.

Weighing only one-eighth as much as clay tile and, therefore, requiring only a light supporting structure, a substantial saving in time, labor and materials is obtained.

Easily finished in any color scheme desired — although regularly furnished in red, green or galvanized Copper-bearing Terne Plate, ARMCO Ingot Iron or in Pure Copper — this roofing lends itself ideally to the general artistic scheme of the building. Universally accepted as good taste.





Enduring !

THE length of service rendered by Milcor Metal Roofs depends somewhat on the material specified—but, in general, these roofs will outlast the building.

Milcor Pure Copper Tile are everlasting. They cannot corrode, they show no effects of wear and they need no attention. Milcor "Copper-bearing" Terne Plate or ARMCO Ingot Iron, Painted or Galvanized, should be repainted every four or five years — the frequency of repainting depending on local climatic conditions. When given reasonable care, such roofs render perfect protection for fifty to one hundred years.

Extremes of temperatures have no effect on Milcor "Titelock" roofs. The ravages of ice, snow, driving torrents of rain and heavy winds cannot crack, chip, or break them.





14-Ounce Pure
Anaconda Copper



Terne Plate or
ARMCO Ingot
Iron Galvanized
After Formed



Terne Plate or
ARMCO Ingot
Iron Painted
Inside and
Outside
Green or Red



MILCOR Titelock Spanish Tile

ON the finest residences, apartment buildings, hotels, churches, theatres, hospitals, schools, libraries and other public buildings, railway stations, garages, filling stations, etc., this artistic and practical roofing is being specified more and more by Architects all over the Country.

Mechanical Specifications	Individual Spanish Field Tile	Individual Closed-End Spanish Starter Tile	Twin Spanish Field Tile	Twin Closed-End Spanish Starter Tile
Actual Size.....	10 x 14	10 x 14	18½ x 14	18½ x 14
Coverage Size.....	8½ x 11¾	8½ x 11¾	17 x 11¾	17 x 11¾
Number of Units per Square..	144	144	72	72
Weights per square:				
IC — Painted.....	110 lbs.	125 lbs.	105 lbs.	120 lbs.
IX — Painted.....	135 lbs.	150 lbs.	130 lbs.	140 lbs.
IC — Galvanized after Formed	130 lbs.	145 lbs.	*	*
IX — Galvanized after Formed	155 lbs.	170 lbs.	*	*
Cut from Galvanized Sheets..	*	*	115 lbs.	130 lbs.
26 Ga. ARMCO Painted.....	160 lbs.	175 lbs.		
26 Ga. ARMCO Galv. after.....	180 lbs.	195 lbs.		
14-Ounce Copper.....	175 lbs.	190 lbs.	*	*

*Not furnished in these grades.

Architectural Specifications:

All roofs shall be covered with Milcor "Titelock" Spanish Metal Tile, manufactured by Milwaukee Corrugating Company, Milwaukee, Wis., in accordance with the following specifications and with the manufacturer's drawings. Tile to be made from: (Consult data above. Specify whether Terne Plate or ARMCO Ingot Iron Galvanized, or Painted Red or Green, or 14-ounce Pure Copper. If painted, specify "with a mixture of iron oxide and linseed oil inside and outside before applying roof." If galvanized, specify what color scheme is desired for painting after applying roof.)

Preparation of Roofs: All roof boards shall be laid closely together and shall be covered with a good grade of Building Paper or felt, free from any tar or acids. All paper shall be laid perfectly smooth and shall be well lapped and nailed securely in place.

Application: Commence laying the tile at the lower left-hand corner of roof when facing ridge. "Titelock" closed-end, starter-tile shall be used on lower course. Lay to chalk line to keep course straight at bottom. Copper Tile shall be nailed with copper nails.

(See pages 16, 17, and 18 for construction details involving proper trimmings, etc.) *Quantity Surveys, and Estimates on Request.*



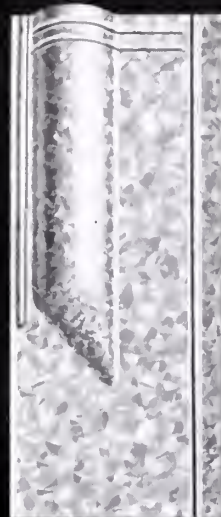
No. 169 VALLEY TILE
LEFT HAND



No. 165 HIP TILE



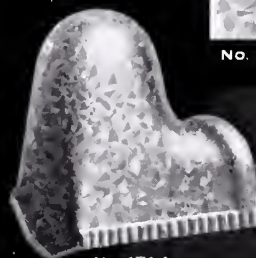
No. 167-A
HIP STARTER



No. 168 VALLEY TILE
RIGHT HAND



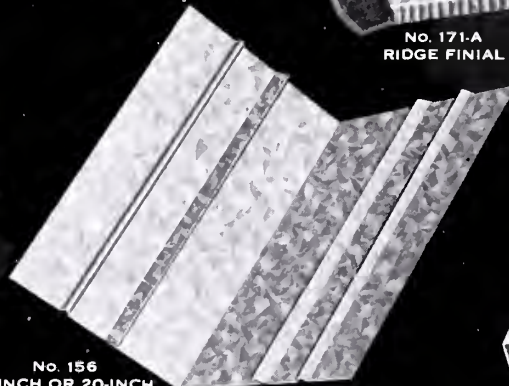
No. 172
4-WAY HIP FINIAL



No. 171-A
RIDGE FINIAL



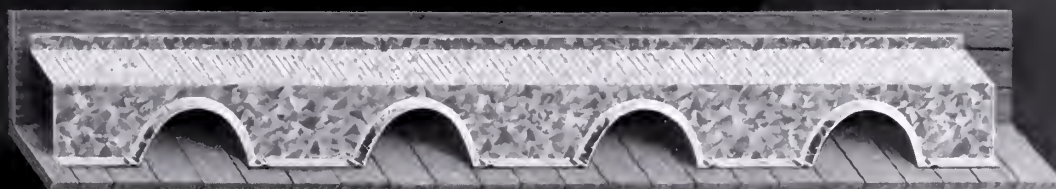
No. 164-A
HIP FINIAL



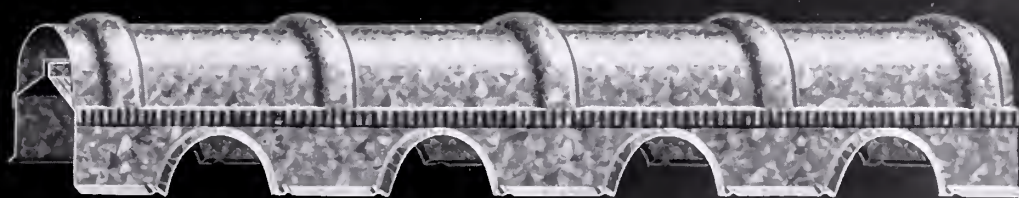
No. 156
14-INCH OR 20-INCH
VALLEY



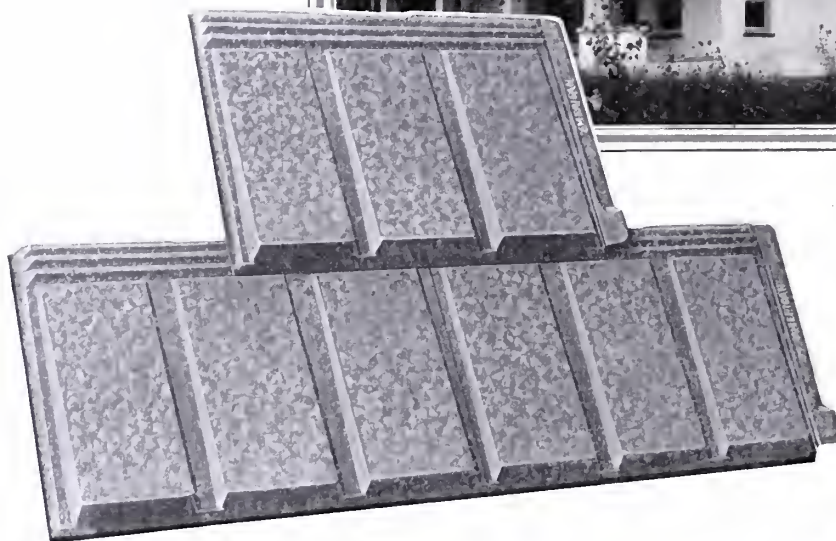
No. 155
GABLE END
FINISH



No. 163 END WALL FLASHING



No. 162 SPANISH RIDGE TILE

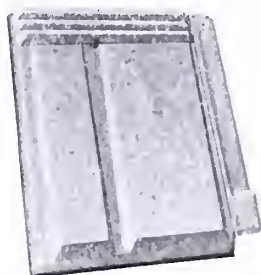


Artistic—Economical

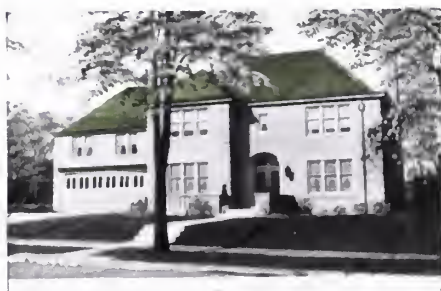
THE attractive roof-effects produced by Milcor Titelock American Metal Tile cannot be obtained in such thoroughly practical manner by any other type of roofing.

The design is sufficiently bold to create strong lights and shadows — a pleasing combination of neat panels — a quality effect which never grows tiresome. The precision in appearance which is so desirable in heavy slate, or in flat, clay-tile roofs, is obtained through American Metal Tile, but the excessive weight of slate or clay is avoided and the supporting structure can be built just as light and as economically as for ordinary wooden shingles or composition roofs.

Exceptionally pleasing color effects can be obtained, in beautiful harmony with the rest of the building. And these Milcor American Metal Tile Roofs are as practical as they are good to look at — cracking or breakage cannot occur, there is no fire-hazard, or danger from lightning, no warping, curling or rotting — no leakage under any circumstances of weather.



Starter Tile



MILCOR "Titelock" American Tile

THE formation of each tile — and this is true also of Milcor Spanish Metal Tile — is such that air pockets are formed, which act as an insulating air blanket after roof is laid. This insulating layer of air is an effective aid in warding off summer's heat and winter's cold, as well as making roofs sound proof.

The "Titelock" feature has value from a sanitary standpoint, too. It keeps out dust as well as rain and wind. Rooms directly under "Titelock" roofs are kept clean more easily.

And for people who have cisterns for rain water, any Milcor Metal Roof is ideal, because these roofs do not discolor rain water nor pollute it with tar or oil products and there are no pebbles to wash off and clutter up the rain spouts or cistern.

Mechanical Specifications: Milcor "Titelock" American Metal Tile

	Actual Size	Coverage Size	Weights per Square:					Number of American Tile per Square
			IX Painted Red or Green	IX Galv. after Formed	26 Ga. Armco Painted	26 Ga. Armco Galv. after Formed	Cut from 14-Ounce Anaconda Copper	
American Field Tile.....	14 x 10	12 x 8	105 lbs.	115 lbs.	120 lbs.	130 lbs.	130 lbs.	148
American Starter Tile.....	7 x 10	6 x 8	115 lbs.	125 lbs.	130 lbs.	140 lbs.	140 lbs.	296

Architectural Specifications:

All roofs shall be covered with Milcor "Titelock" American Metal Tile, manufactured by Milwaukee Corrugating Company, Milwaukee, Wis., in accordance with following specifications and with manufacturer's drawings. Tile to be made from: (Consult Tabular Data above.) *Specify whether* Terne Plate or ARMCO Ingot Iron Galvanized or Painted Red or Green, or 14-ounce Pure Copper. *If painted, specify* "with a mixture of iron oxide and linseed oil inside and outside before applying roof." *If galvanized, specify what color scheme is desired for painting after applying roof.*

Preparation of Roofs: All roof boards shall be laid closely together and shall be covered with a good grade of Building Paper or Felt, free from any tar or acids. All paper shall be well lapped and nailed securely in place.

Application: Commence laying the tile at the lower left-hand corner when facing ridge of roof. Lay to chalk line to keep first course straight at bottom. Begin second course and every second course above it, with half-size American Starter Tile, thus staggering the panels in a manner similar to the usual practice of laying wooden shingles.

Approximately one pound of Zinc-coated Nails are required per square. For Pure Copper Tile, use copper nails always.

Send roof plans from which we can furnish Lump-sum Estimates or Quantity Surveys on any specific job, without cost or obligation to you.



MILCOR “Titelock” Art Metal Shingles

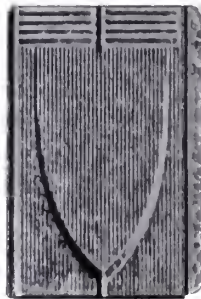
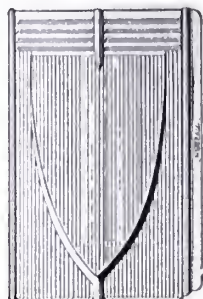
TO the owner of the building, the Milcor Titelock feature means a great deal. Our extensive National advertising has educated the Public to appreciate the advantages available only in this type of roofing.

To the Architect and Contractor, Milcor “Titelock” also means much, because the superiority of this modern roofing results in work that is successful in the broadest sense of the term — a service well rendered, owners thoroughly satisfied, repeat business and profit — fine enough for the most costly dwelling — in good taste on any structure.

Invariably the building roofed with Milcor Titelock Art Metal units is recognized as worth more and can be sold easier and at a higher price than it ordinarily would bring.

Titelock Art Metal Shingles, furnished in three designs, A, B, and C — offer an interesting medium for distinctive roof effects, especially for churches, theatres, business blocks, and public buildings.

Two sizes are available. The larger size intended for the main roofs and the smaller size for towers and gables or similar subsidiary portions of the roof.





Style "A"



Style "C"

For Architectural Specifications follow details similar to those on page 11, inserting

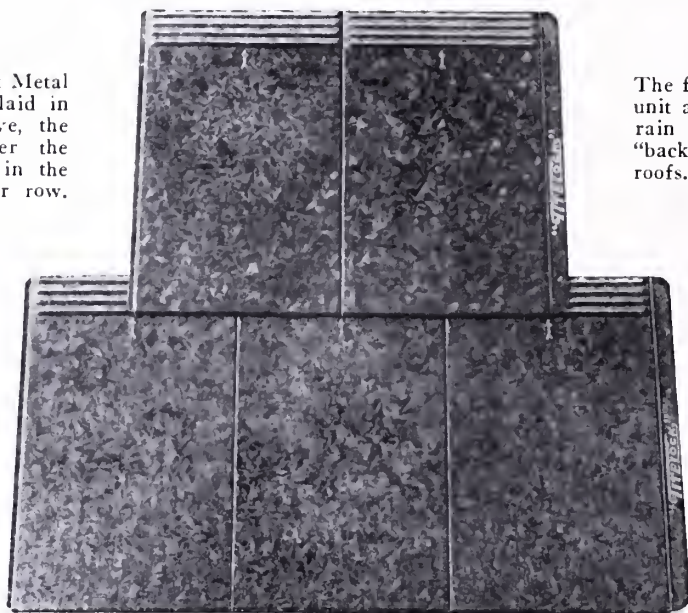
style and grade desired. For Trimmings and Valley fitting data see pages 15 to 19.

Mechanical Specifications: Milcor "Titelock" Art Metal Shingles

	Coverage Size	Number per Square	SHIPPING WEIGHTS PER SQUARE:										
			Terne Plate Painted Both Sides		Terne Plate Galv. after Formed		Cut from Tight Coat Galvanized Sheets	No. 26 Ga. ARMCO		Pure Zinc		Pure Cold-Rolled Anaconda Copper	
			IC	IX	IC	IX		Painted both Sides	Galv. after Formed	No. 9	No. 10	12-Oz.	14-Oz.
Style "A" — 10" x 14"	8" x 12"	148	85	100	95	105	100	110	120	100	110	110	120
Style "A" — 7" x 10"	5½" x 8½"	320	95	110	105	115	115	120	130	116	130	130	145
Style "B" — 10" x 14"	8" x 12"	148	85	100	95	105	100	110	120	100	110	110	120
Style "B" — 7" x 10"	5½" x 8½"	320	95	110	105	115	115	120	130	116	130	130	145
Style "C" — 10" x 14"	8" x 12"	148	85	100	95	105	100	110	120	100	110	110	120



All styles of Titelock Art Metal Shingles and Slate are laid in the manner shown above, the edge fitting snugly over the bead, or at the arrow in the center of the next lower row.



The four ribs at the top of each unit are four good reasons why rain or melted snow cannot "back up" underneath Titelock roofs.

MILCOR "Titelock" Metal Slate

THIS metal slate — or style "D" Titelock — is justly popular for the precise, neat effects it produces. It is offered in two sizes, 10 inches by 14 inches and 7 inches by 10 inches.

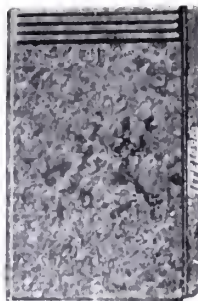
By staggering each unit as above, all possibility of leakage at joints of units is eliminated and ideal, artistic effects are obtained.

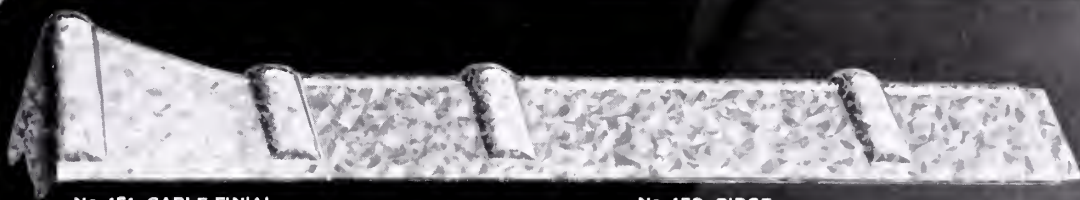
No other fitting is required except at valleys or around dormer-windows. Such details are explained on pages 16, 17, and 18.

For Architectural Specifications follow details similar to those on Page 11, inserting style and grade desired. For Trimmings and Valley fitting data consult pages 15 to 19. Send roof plans for lump-sum estimates.

Mechanical Specifications: Milcor "Titelock" Metal Slate—Style "D"

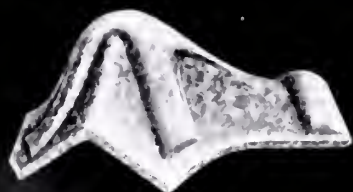
Actual Size	Coverage Size	Number per Square	SHIPPING WEIGHTS PER SQUARE:										
			Terne Plate Painted Both Sides		Terne Plate Galvanized after Formed		Cut from Tight Coat Galvanized Sheets	No. 26 Ga. ARMCO		Pure Zinc		Pure Cold-Rolled Anaconda Copper	
			1C	1X	1C	1X		Painted Both Sides	Galv. after Formed	No. 9	No. 10	12-Oz.	14-Oz.
10" x 14"	8" x 12"	148	86	102	95	105	105	110	120	106	120	120	136
7" x 10"	5¾" x 8½"	320	95	110	105	115	115	120	130	116	130	130	145





No. 151 GABLE FINIAL

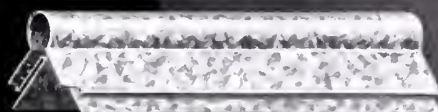
No. 150 RIDGE



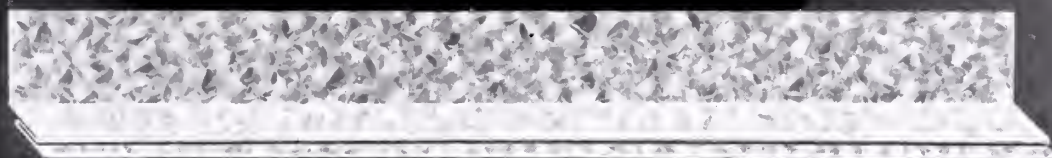
HIP FINIAL



No. 915
GABLE FINIAL



No. 149
ROLL RIDGE COPING



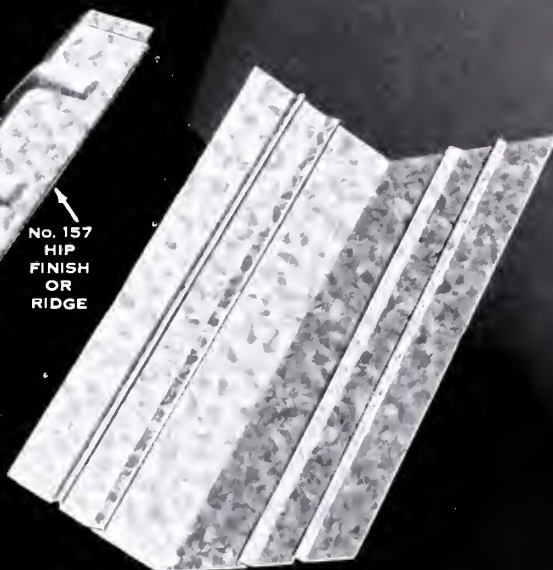
No. 161 PORCH FLASHING

No. 144
ROLL HIP
COVERING



No. 144-A
ROLL HIP
STARTER

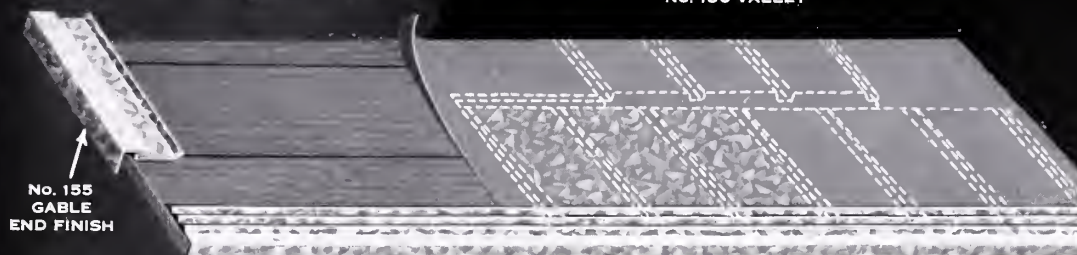
No. 157
HIP
FINISH
OR
RIDGE



No. 159
HIP STARTER

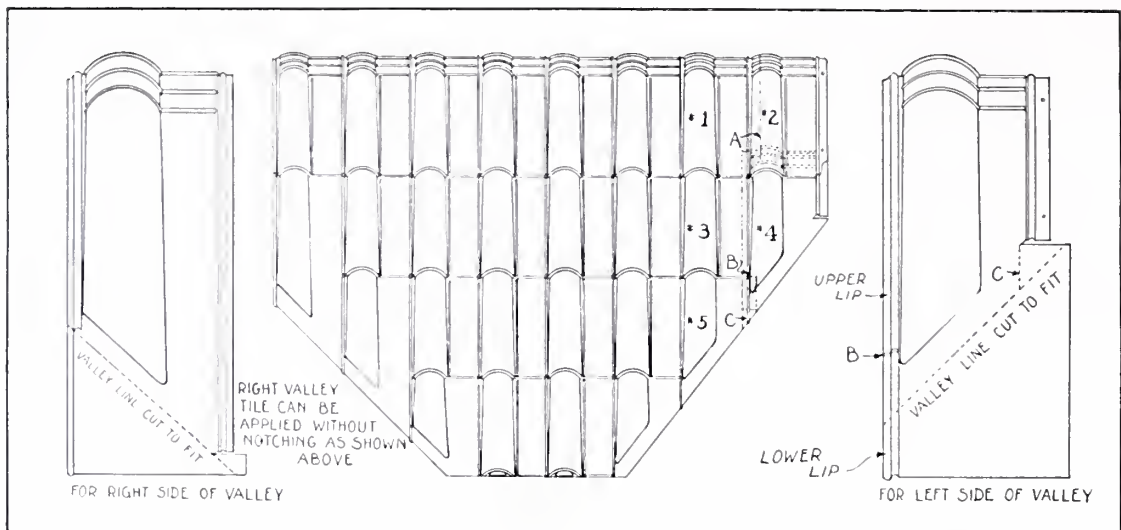


No. 156 VALLEY



No. 155
GABLE
END FINISH

No. 154 EAVE FINISH



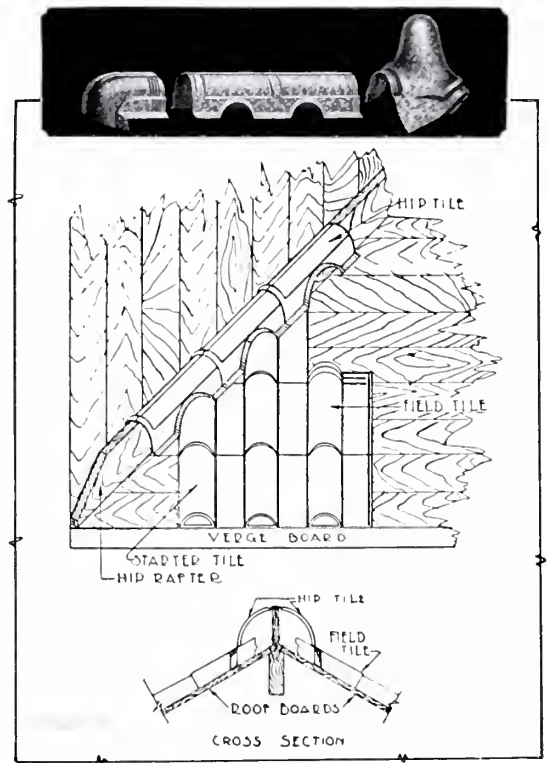
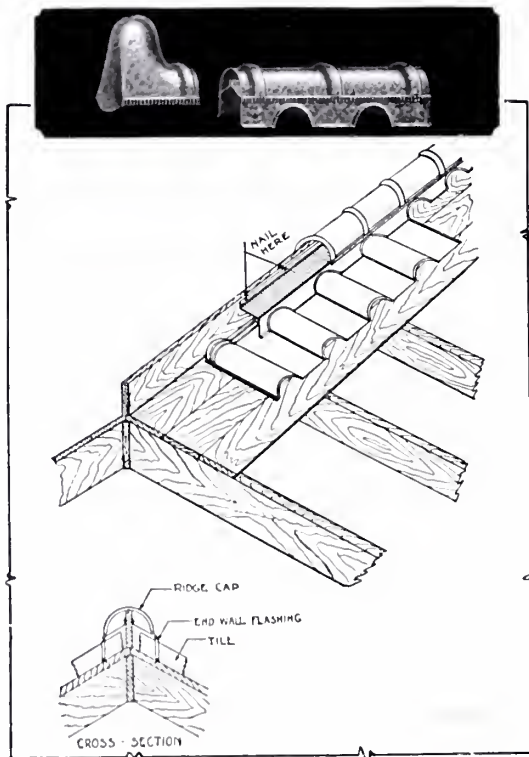
Architectural and Construction Details for Milcor Art Metal Roofing and Trimming

Application of Milcor Spanish Metal Tile: Commence laying closed-end Starter Tile at lower left-hand corner when facing the ridge. Use chalk line to keep the first course precisely straight. With this straight, the rest of the roof will naturally come straight. The second and subsequent courses are laid with regular, open-end tile, always starting at the left. The joints continue straight up on this type—not staggered as with American Tile, Shingles and Slate.

At Valleys (figure No. 1, above) use right and left Valley Tile No. 168 and No. 169 respectively, as illus-

trated on page 9. The Nailing Flange "A" on tile No. 1 is bent up to fit over Valley Tile No. 4. Tile No. 2 locks into Tile No. 1, covering Nailing Flange "A." Notch Valley Tile No. 4 at point "B," where Valley Tile extends beyond regular tile. The upper lip of Valley Tile No. 4 fits into the lock of Tile No. 3, while the lower lip on Valley Tile No. 4 fits into the lock of Valley Tile No. 5. Flange "C" on Valley Tile No. 5 underlaps Valley Tile No. 4.

Cut the Valley Tile to the same angle as the Valley, allowing a projection of about one-half inch over the



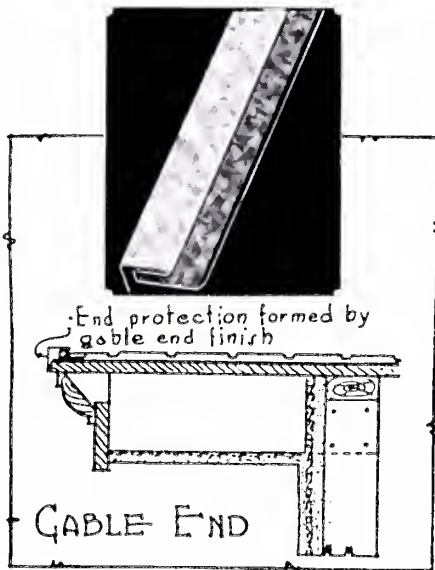


Figure 4

fold nearest the break. Bend the projecting part of the tile to form a hook over the fold, after which a hand tongue or any other suitably-shaped tool can be used to lock the tile to the fold in the Valley.

At End Walls and Ridges, (Figure 2), use End Wall Flashing No. 163 and Ridge Tile No. 162 respectively, as illustrated on page 9, wherever the Field Tile run dead into wall, dormer, chimney, skylight, etc., or ridge. This Flashing is stamped and cut out so as to fit snugly over raised part of Field Tile. The sides of various projective surfaces are flashed by bending the tile so that it projects up the side of the wall, etc., not less than 3 inches, and then counterflashed down to within 1 inch of the roof. Hip Finial No. 164-A or No. 172, are used as required.

At the Hip (Figure 3) nail a board 1 inch x 5½ inches, on edge, on the top of roof boards and in line with the hip rafter. Field Tile are then cut at angle to fit against this board. At the eave end of hip, No. 167-A Hip Starter, illustrated on page 9, should be applied—then the application of Hip Tile No. 165 can begin. Hip Tile are made in two parts—right and left. Looking at the ridge, the right half of the hip should be applied first

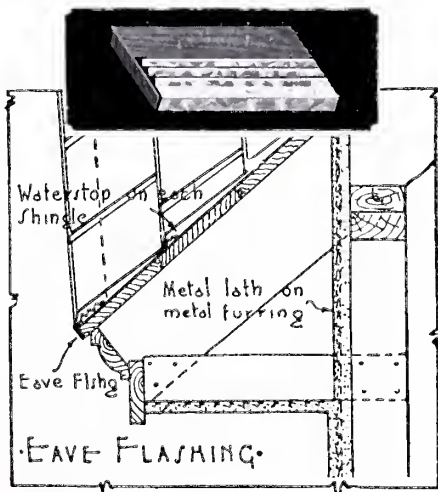


Figure 5

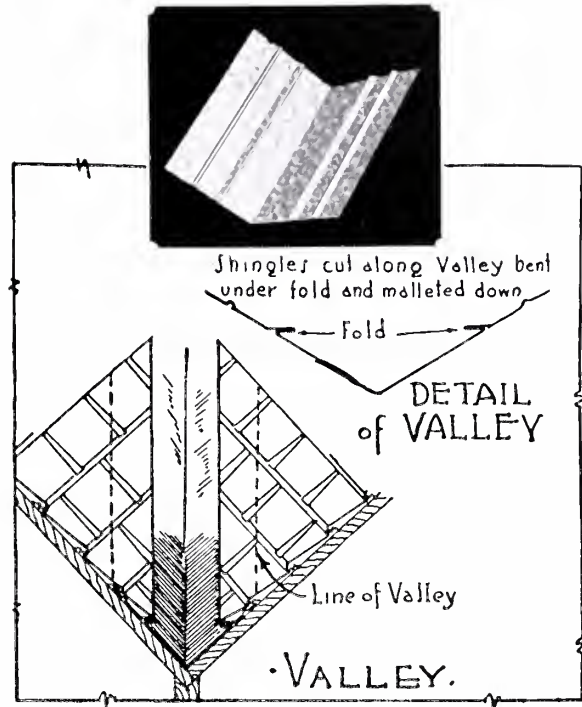


Figure 6

and then the left half lapped over the right on top of the board. Hip Tile are cut out so as to fit the raised part of the Field Tile. To make a finished appearance where two hips meet, a finial is furnished.

At the Gable, on verge end (Figure 4) for all types of Milcor Roofs, Gable End Finish No. 155, as illustrated on page 9, should be used. At the left gable (when facing ridge) the Gable End Finish must be in place before

CHIMNEY AND DORMER SIDES

Shingles are bent up to fit about 3 inches onto the sides of dormer or chimney and then counterflashed. Saddle built up, flashed and counterflashed, extending flashing about 6 inches under shingles at top and sides.

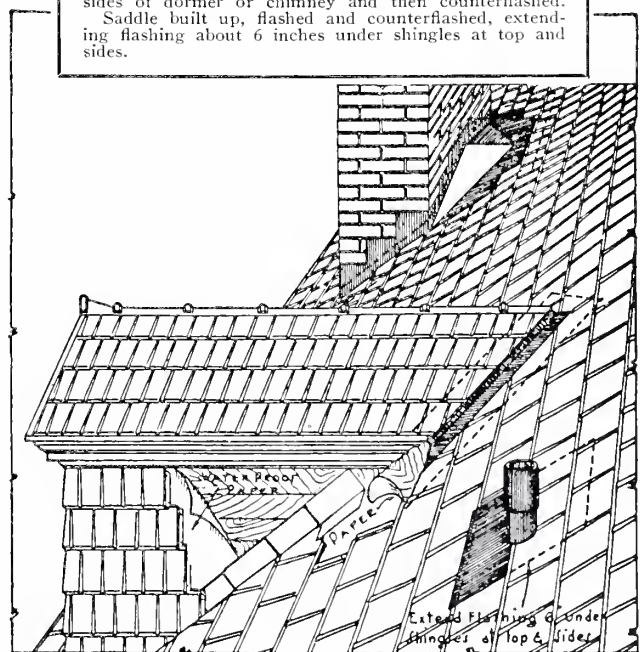


Figure 7

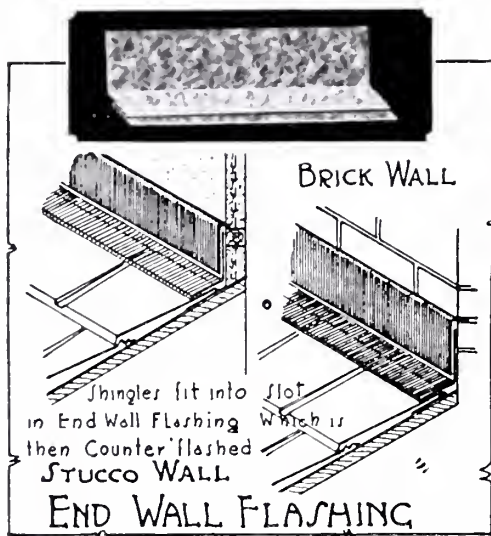


Figure 8

the application of tile is started. This Gable Finish is merely nailed through the flange over end of roof. The left sides of tile are then inserted into the fold of the Finish and the fold is then securely malletted down over the edge of each tile inserted.

At Eave Edge (Figure 5), when using "Titelock" American Tile, Shingles or Slate, Eave Finish No. 154 should be used. It is merely nailed to the eave edge and the bottom edge of the first course of American Tile, Shingles or Slate laps over the four ridges of this Eave Finish just as each unit thereafter locks over the ridges of the preceding course, to prevent water from backing up or blowing in under the roofing. See page 15.

At Valleys (Figure 6), for all types of Milcor "Titelock" Roofing, use Formed Valley No. 156, as illustrated on pages 9 and 15, in either 14-inch or 20-inch widths, as required. The 20-inch is more desirable, as it presents a larger surface on each side of the break for the flow of water. This Valley is formed with two folds on each side of the break, the folds being pitched slightly toward the break so as to make the Valley absolutely waterproof after the roofing units are applied. Laying of the Valley is started at the eave end and is run up to the ridge. Each joint must be lapped at least 2 inches and should be well soldered. Nailing should be done only along outer edges of the Valley.

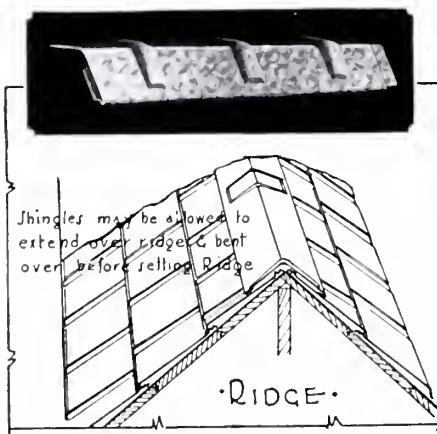


Figure 9

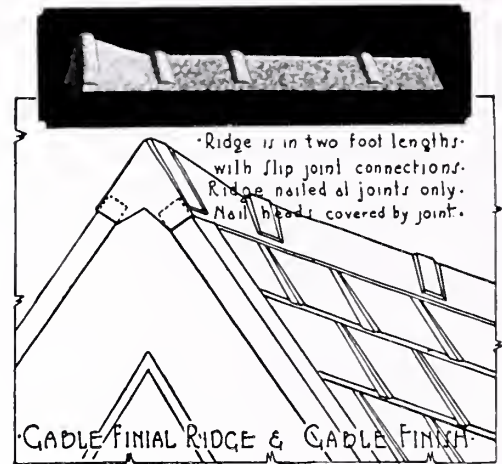


Figure 10

Figure 7 shows how the sides of Dormers, Chimneys, etc., as well as Saddles, are flashed. Notice instructions on the drawing.

Figure 8 shows how No. 161 End Wall Flashing is used wherever the Shingles run dead into a wall, chimney, dormer, etc.

Figure 9 shows how No. 150 Ridge should be applied. Do not apply until the shingles are in place at the right point. The shingles should extend approximately one inch over the ridge and can then be bent to fit over the other side. After this is done in each side of the ridge, No. 150 Ridging should be applied. This ridge finish is in 2-foot lengths and has slip-joint connections, making a neat, attractive and weather-proof finish.

Figure 10 shows Gable Finial No. 151, Ridge No. 150 and Gable End Finish No. 155 in relative position.

Figure 11 shows the application of No. 157 Hip Finish, with regular Hip Finial and No. 159 Hip Starter. Application of No. 157 Hip Finish should be commenced at the ridge and be worked down to the eave. This is a slip-joint product, thereby covering all nails and making a neat as well as a weather-proof finish at the hip.

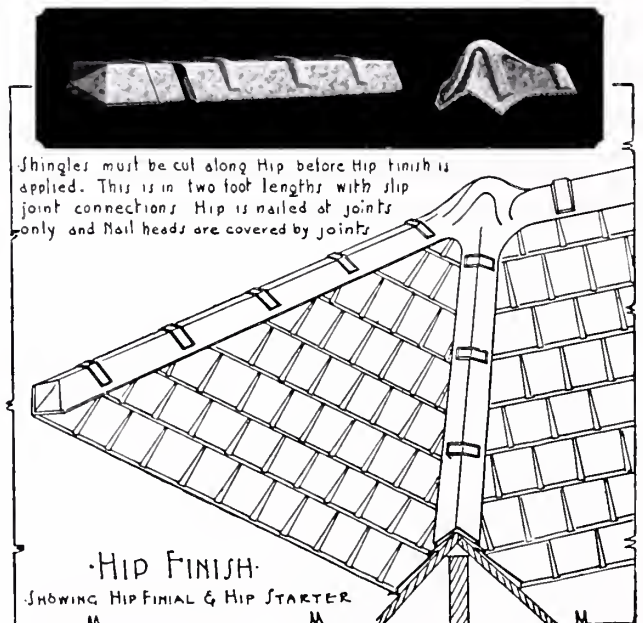


Figure 11

MILCOR ROOF GUTTERS--STYLES A, B & K

STYLE A--ROOF GUTTER



STYLE B--ROOF GUTTER



STYLE K--ROOF GUTTERS



List Prices: Styles A, B & K Roof Gutters, Mitres, Ends and Outlets

In Open Hearth Galv. Steel, "Coppered Metal" or Pure ARMCO Ingot Iron, Copper Prices on Request

GUTTERS: List Prices per Foot							MITRES: List Prices Each					
Girth:	12"	14"	15"	18"	20"	24"	12"	14"	15"	18"	20"	24"
No. 28 Ga.	\$.25	\$.32	\$.35	\$.42	\$.48	\$.65	\$1.00	\$1.28	\$1.40	\$1.68	\$1.92	\$2.60
No. 26 Ga.	.31	.40	.43	.50	.58	.70	1.24	1.60	1.72	2.00	2.32	2.80
No. 24 Ga.	.40	.50	.53	.60	.68	.80	1.60	2.00	2.12	2.40	2.72	3.20

ENDS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70. —OUTLETS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.

STYLE A furnished only in 10-foot lengths; Styles B and K in 10- or 12-foot lengths, with back of trough same height as bead-side, unless special high-backs are specified. Crated: 10-foot lengths, 250 feet to crate; 12-foot lengths, 252 feet to crate.

Intermediate girths take LIST PRICE of next higher girth.

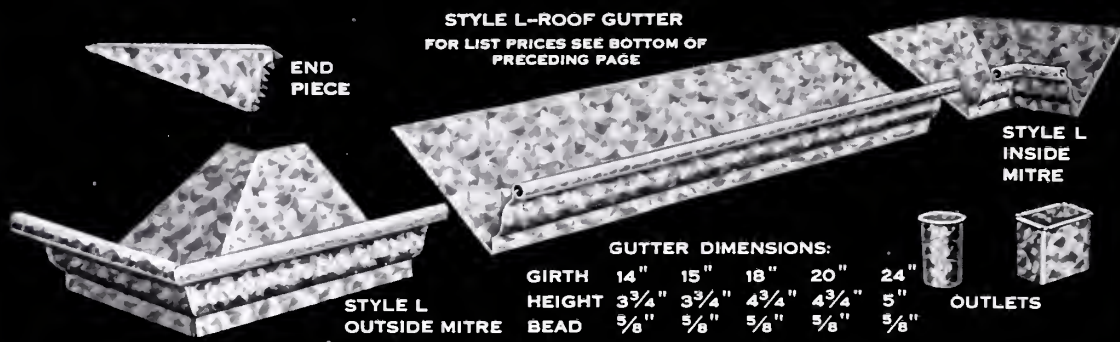
When ordering MITRES specify INSIDE or OUTSIDE.

Always specify whether SHEET STEEL, "Coppered Metal", pure ARMCO Ingot Iron, or pure ANACONDA Copper. Discounts on request.

MILCOR

ROOF AND BOX GUTTERS--STYLES L, O & D

STYLE L-ROOF GUTTER
FOR LIST PRICES SEE BOTTOM OF PRECEDING PAGE




STYLE L OUTSIDE MITRE **STYLE L INSIDE MITRE**

GUTTER DIMENSIONS:

	14"	15"	18"	20"	24"
GIRTH	14"	15"	18"	20"	24"
HEIGHT	3 3/4"	3 3/4"	4 3/4"	4 3/4"	5"
BEAD	5/8"	5/8"	5/8"	5/8"	5/8"

OUTLETS

STYLE O-BOX GUTTER




STYLE O OUTSIDE MITRE **STYLE O INSIDE MITRE**

GUTTER DIMENSIONS:

	3"	3 1/2"	4"	5"	6"
SIZE	3"	3 1/2"	4"	5"	6"
DEPTH	2 1/2"	3 1/2"	3 1/2"	4"	5"
GIRTH	10"	11 1/2"	13"	16"	18"
BEAD	5/8"	5/8"	5/8"	5/8"	5/8"

OUTLETS

STYLE D-BOX GUTTER



STYLE D OUTSIDE MITRE **STYLE D INSIDE MITRE**

GUTTER DIMENSIONS:

	5"	6"	7"	8"
SIZE	5"	6"	7"	8"
DEPTH	3"	3 7/8"	5"	5 1/2"
GIRTH	12"	15"	18"	20"
BEAD	5/8"	5/8"	5/8"	5/8"

OUTLETS

List Prices: Styles L, O & D Roof Gutters, Mitres, Ends and Outlets

In Open Hearth Galv. Steel, "Coppered Metal" or Pure ARMCO Ingot Iron. . . . Copper Prices on Request

GUTTERS: List Prices per Foot								MITRES: List Prices Each						
Girth:	10"	12"	13"	15"	16"	18"	20"	10"	12"	13"	15"	16"	18"	20"
No. 28 Ga.	\$.20	\$.25	\$.29	\$.35	\$.38	\$.42	\$.48	\$.80	\$1.00	\$1.16	\$1.40	\$1.52	\$1.68	\$1.92
No. 26 Ga.	.24	.31	.36	.43	.46	.50	.58	.96	1.24	1.44	1.72	1.84	2.00	2.32
No. 24 Ga.	.34	.40	.45	.53	.56	.60	.68	1.36	1.60	1.80	2.12	2.24	2.40	2.72

ENDS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.—OUTLETS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.

FURNISHED in 10- or 12-foot lengths, with back of trough same height as head-side, unless special high-backs are specified. Crated: 10-foot lengths, 250 feet to crate; 12-foot lengths, 252 feet to crate.

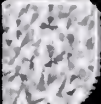
Intermediate girths take LIST PRICE of next higher girth.


When ordering MITRES specify *INSIDE* or *OUTSIDE*.


Always specify whether SHEET STEEL, "Coppered Metal", pure ARMCO Ingot Iron, or pure ANACONDA Copper. Discounts on request.


MILCOR


BOX GUTTERS--STYLES E, F & G


**END
PIECE**

STYLE E-BOX GUTTER




**STYLE E
OUTSIDE MITRE**



**STYLE E
INSIDE MITRE**

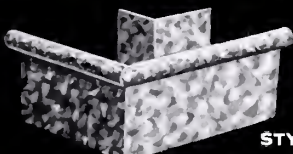

OUTLETS


GUTTER DIMENSIONS:


SIZE	5"	6"	7"	8"
DEPTH	3 1/2"	4 1/2"	5"	6 3/4"
GIRTH	13"	15"	18"	22"
BEAD	5/8"	5/8"	5/8"	5/8"


**END
PIECE**

STYLE F-BOX GUTTER




**STYLE F
OUTSIDE MITRE**

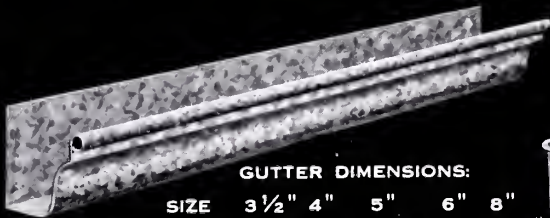

**STYLE F
INSIDE MITRE**

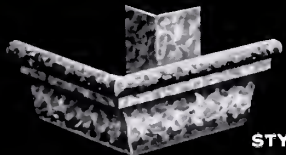

OUTLETS


GUTTER DIMENSIONS:


SIZE	5"	6"	7"	8"
DEPTH	4 1/2"	5 1/4"	5 1/2"	5 7/8"
GIRTH	16"	18"	20"	22"
BEAD	5/8"	5/8"	5/8"	5/8"


**END
PIECE**

STYLE G-OGEE GUTTER



**STYLE G
OUTSIDE MITRE**


**STYLE G
INSIDE MITRE**


OUTLETS

GUTTER DIMENSIONS:

SIZE	3 1/2"	4"	5"	6"	8"
DEPTH	3 1/4"	4"	4 3/4"	6"	7 1/8"
GIRTH	10"	13"	15"	18"	22"
BEAD	1/2"	5/8"	5/8"	5/8"	5/8"

List Prices: Styles E, F, & G Roof Gutters, Mitres, Ends and Outlets

In Open Hearth Galv. Steel, "Coppered Metal" or Pure ARMICO Ingot Iron. Copper Prices on Request

GUTTERS: List Prices per Foot								MITRES: List Prices Each							
Girth:	10"	13"	15"	16"	18"	20"	22"	10"	13"	15"	16"	18"	20"	22"	
No. 28 Ga.	\$.20	\$.29	\$.35	\$.38	\$.42	\$.48	\$.60	\$.80	\$1.16	\$1.40	\$1.52	\$1.68	\$1.92	\$2.40	
No. 26 Ga.	.24	.36	.43	.46	.50	.58	.65	.96	1.44	1.72	1.84	2.00	2.32	2.60	
No. 24 Ga.	.34	.45	.53	.56	.60	.68	.75	1.36	1.80	2.12	2.24	2.40	2.72	3.00	

ENDS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.—OUTLETS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.

FURNISHED in 10- or 12-foot lengths, with back of trough same height as bead-side, unless special high-backs are specified. Crated: 10-foot lengths, 250 feet to crate; 12-foot lengths, 252 feet to crate.

Intermediate girths take LIST PRICE of next higher girth.

When ordering MITRES specify *INSIDE* or *OUTSIDE*.

Always specify whether SHEET STEEL, "Coppered Metal", pure ARMICO Ingot Iron, or pure ANACONDA Copper. Discounts on request.

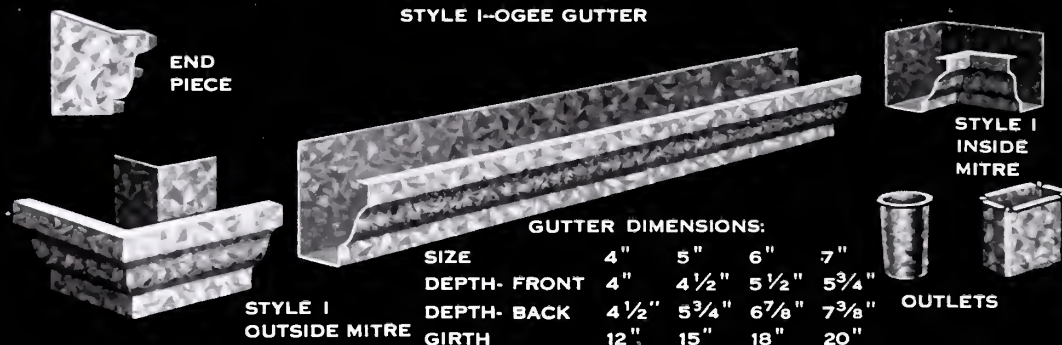
MILCOR

OGEE GUTTERS--STYLES H, I & J

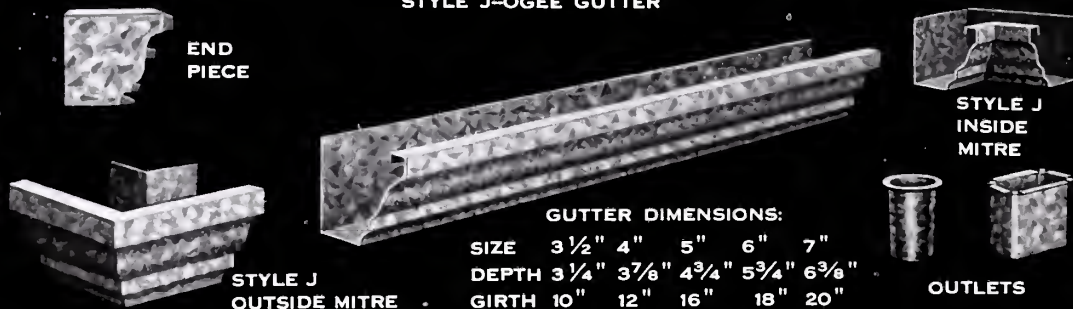
STYLE H-OGEE GUTTER



STYLE I-OGEE GUTTER



STYLE J-OGEE GUTTER



List Prices: Styles H, I & J Roof Gutters, Mitres, Ends and Outlets

In Open Hearth Galv. Steel, "Coppered Metal" or Pure ARMICO Ingot Iron. . . . Copper Prices on Request

GUTTERS: List Prices per Foot

MITRES: List Prices Each

Girth:	10"	12"	13"	15"	16"	18"	20"	22"	42"	10"	12"	13"	15"	16"	18"	20"	22"	24"
No. 28 Ga.	\$.20	\$.25	\$.29	\$.35	\$.38	\$.42	\$.48	\$.60	\$.65	\$.80	\$1.00	\$1.16	\$1.40	\$1.52	\$1.68	\$1.92	\$2.40	\$2.60
No. 26 Ga.	.24	.31	.36	.43	.46	.50	.58	.65	.70	.93	1.24	1.44	1.72	1.84	2.00	2.32	2.60	2.80
No. 24 Ga.	.34	.40	.45	.53	.56	.60	.68	.75	.80	1.36	1.60	1.80	2.12	2.24	2.40	2.72	3.00	3.20

ENDS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70. — OUTLETS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.

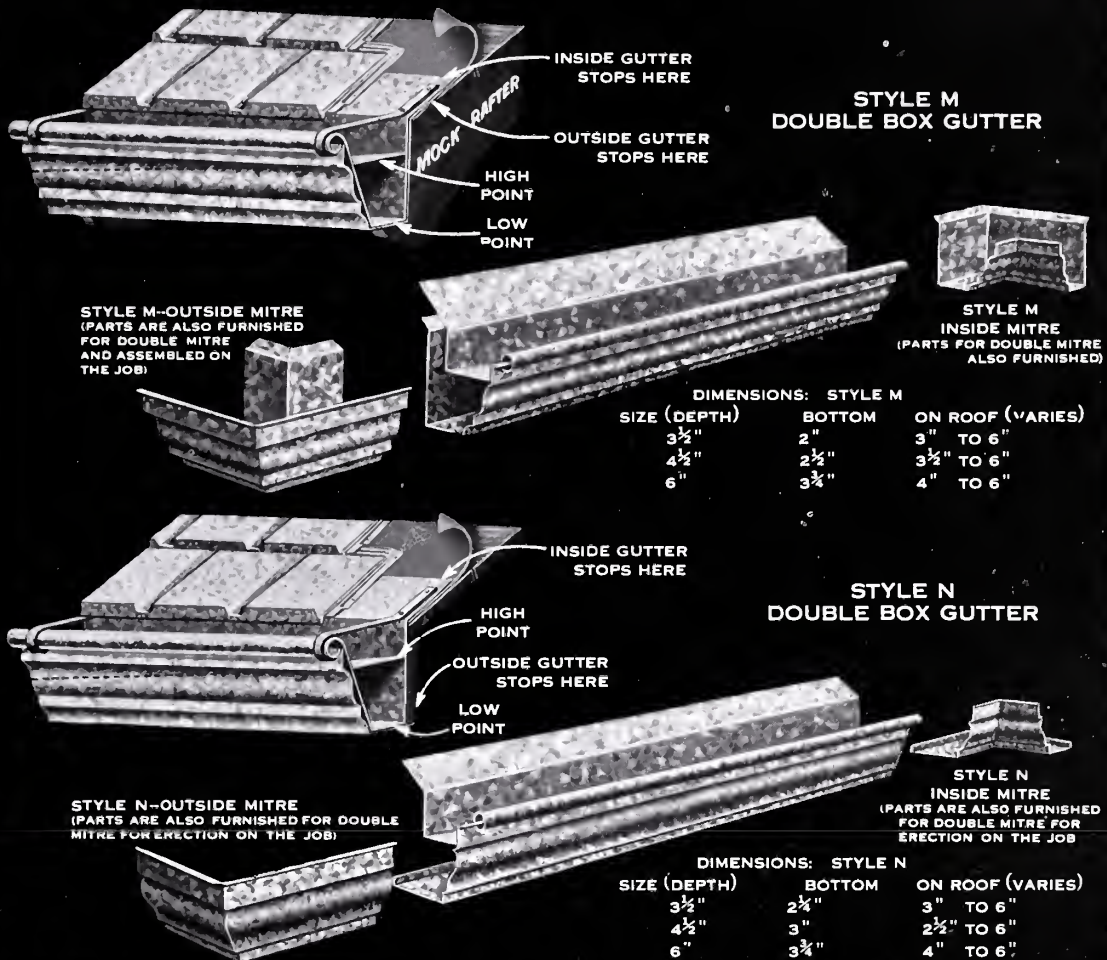
FURNISHED in 10- or 12-foot lengths, with back of trough same height as bead-side, unless special high-backs are specified. Crated: 10-foot lengths, 250 feet to crate; 12-foot lengths, 252 feet to crate.

Intermediate girths take LIST PRICE of next higher girth.

When ordering *MITRES* specify *INSIDE* or *OUTSIDE*.

Always specify whether SHEET STEEL, "Coppered Metal", pure ARMICO Ingot Iron, or pure ANACONDA Copper. Discounts on request.

MILCOR DOUBLE BOX GUTTERS



List Prices: Double Box Gutters and Mitres

In Open Hearth Galv. Steel, "Coppered Metal" or Pure ARMCO Ingot Iron. . . . Copper Prices on Request

GUTTERS: List Prices per Foot				MITRES: List Prices Each		
Size (Depth):	3½-inch	4½-inch	6-inch	3½-inch	4½-inch	6-inch
No. 28 Ga.	\$.26	\$.32	\$.42	\$3.12	\$3.84	\$5.04
No. 26 Ga.	.29	.36	.50	3.38	4.32	6.00
No. 24 Ga.	.36	.45	.60	4.32	5.40	7.20
No. 28 Ga.	.24	.28	.36	2.88	3.36	4.32
No. 26 Ga.	.27	.32	.41	3.24	3.84	4.92
No. 24 Ga.	.33	.39	.51	3.96	4.68	6.12

ENDS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.—OUTLETS: List Price Each: 28 Ga. \$.50; 26 Ga. \$.60; 24 Ga. \$.70.

STRONG, leakproof, good looking, practical. Send plans or sketches when ordering, showing exact location of downspouts, so the inside gutter may be pitched properly to outlets.

Special sizes made to order; prices on request.

When ordering MITRES specify *INSIDE* or *OUTSIDE*.

Always specify whether *with* or *without* HANGERS.

Always specify whether SHEET STEEL, "Coppered Metal", pure ARMCO Ingot Iron, or pure ANACONDA Copper. Discounts on request.

Packed in special crates, furnished at cost.

Above prices apply on 250 feet or more.

MILCOR

Alpina Ventilators



IN the Milcor Alpina Ventilator, the entire capacity of the flue is utilized for the expulsion of foul air, the cap or upper portion of the ventilator being three-fifths larger than the flue.

The remarkable efficiency of the Alpina lies in its sensitiveness and obedience to air currents. The revolving part of this Ventilator runs on brass ball-bearings which are

completely encased and weather-protected. Surmounting this revolving section is a broad vane. The slightest air movement against this vane turns the mouth of the Alpina to the leeward of the wind, thus preventing any possibility of back draught.

The syphonating power of the Alpina Ventilator is produced by the rush of exterior air currents entering between the flaring aprons at the base. Guided upward and out of the mouth of the Ventilator, these air currents pass directly over the end of the flue and create a vacuum which forcibly draws out the foul air. There are thousands of Alpina Ventilators in successful use on all types of buildings.





Patented Oct. 21, 1913.



Efficiency Built-In

The Alquina is ruggedly built, rigidly braced throughout to keep it from getting out of true — braces on each side of the vane; rod reinforcement around mouth of exhaust; brace riveted at back of vent and a seamless tube reinforcement which holds vent in place as it revolves on its bearings. Another brace provides additional stability and free swing of upper section. The non-rustable, fully encased ball-race is firmly braced; the perpendicular shaft rests securely on a crossbar which is also braced.

Mechanical Specifications and Capacities:

Catalog Size	Area Square Required	Round Diameter	Height	Cubic Feet per hour Wind at 5 Miles per Hour	Shipping Weight
12	20"	12"	10 $\frac{1}{2}$ "	16,500	50 lbs.
14	22"	14"	12"	22,200	60 lbs.
16	24"	16"	14"	29,400	75 lbs.
18	28"	18"	17"	39,000	80 lbs.
20	30"	20"	18"	48,000	140 lbs.
24	36"	24"	20"	66,000	175 lbs.
30	40"	30"	23"	102,000	325 lbs.
36	52"	36"	24"	153,000	450 lbs.

Furnished in Pure Copper, Galvanized Open-Hearth Steel or Galvanized Coppered Metal. On galvanized grades, all braces are galvanized after formation.

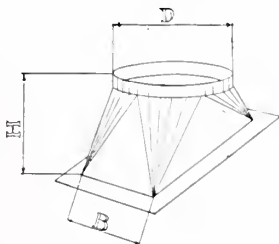
A Testimonial

We have a battery of ten heat-treat furnaces in this department and previous to the installation of Alquina Ventilators, it was nearly impossible for us to keep men on this job, due to the fact that these furnaces at times give off excessive amounts of smoke and gas. We are pleased to say that since the installation of the Ventilators has been made, we have not had a single complaint in this department from this cause.

Very truly yours,

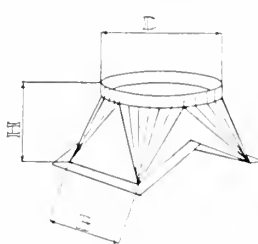
LADISH DROP FORGE COMPANY,
Cudahy, Wisconsin.

The three styles of bases shown here, meet the requirements of various styles of roofs.



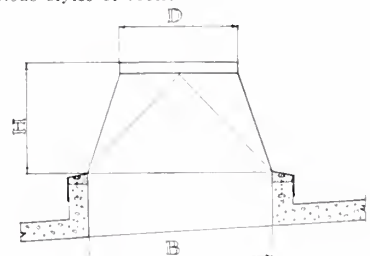
Style A

For Slanting or Saw-Tooth Roof.



Style B

For Ordinary Peak Roof, Slanting Both Ways.



Style C

For Installation on Concrete Roof.



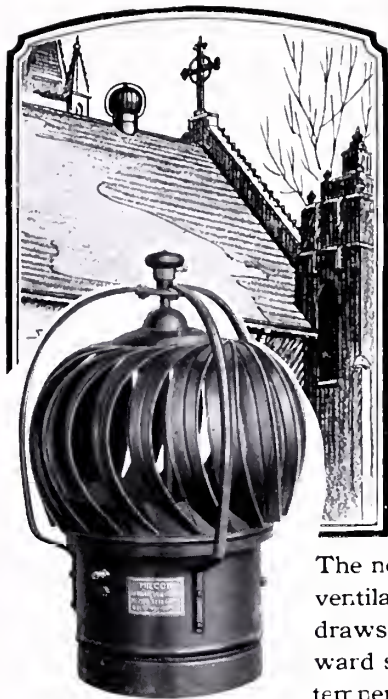
MILCOR VENTILATORS IN SERVICE

ALPINA VENTILATORS ON BUILDINGS
AT NASH MOTORS COMPANY
KENOSHA, WISCONSIN



ALPINA VENTILATORS ON RITCHIE GROCERY CO.
ELDORADO, ARKANSAS

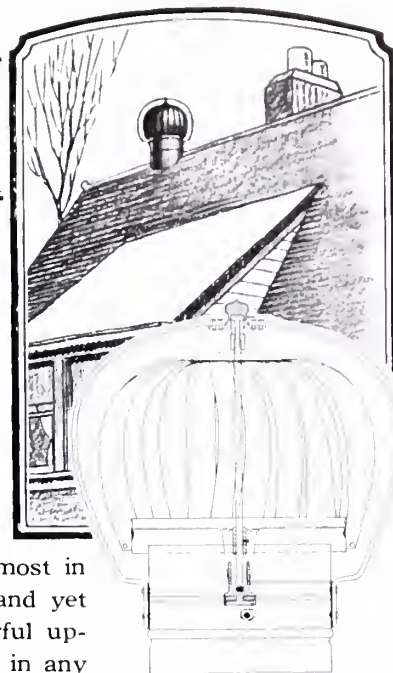
ALPINA VENTILATORS AT MONTREAL MINE, IRONWOOD, MICHIGAN



**AUTOMATIC - EFFICIENT
PERMANENT**

The Improved MILCOR Turbine Ventilator

The new Milcor Turbine Ventilator represents the utmost in ventilating efficiency. It requires absolutely no power and yet draws a remarkable amount of air through its powerful upward suction. It exhausts surely, silently and cheaply, in any temperature and under every condition.



The Milcor Turbine Ventilator handles difficult ventilating problems on which power-driven systems were used heretofore. It has proven its efficiency time and again. Because its ability to withdraw impure air is measurable and guaranteed, there is no question about its satisfactory operation. It is especially adapted for removing smoke and gas in factories, mills and garages where constant dependable ventilation is an acknowledged necessity. Good ventilation is also supplied by Milcor Ventilators in churches, schools, hospitals, and public institutions where the comfort and well-being of the occupants are of prime consideration.

DEPENDABLE OPERATION

The slightest motion of air is sufficient to operate the Milcor Turbine Ventilator. A vacuum is created as soon as the head begins to revolve because the air within the head is expelled by centrifugal force. This ventilator, therefore, actually pulls out the impure air automatically, continuously and silently. The rotating turbine makes down drafts a mechanical impossibility.

The real reason for unbearably hot attics in summer is lack of ventilation. The installation of one or two turbine ventilators on the roof of the attic will make such a difference in the temperature of both the attic and the rooms below, that expensive insulation to keep out heat is not necessary.

RIGID CONSTRUCTION

The blades and base are built of galvanized Armco Ingot Iron, protected with a special compound which renders the metal practically immune to the deteriorating action of weather and acid fume conditions. The ventilator is also constructed of cold rolled pure copper. Attention is called to the particularly strong frame work which supports the bearings at top and bottom of the head. It is equipped with Alemite fittings and when once installed requires no attention, care or adjusting other than lubrication.

METHODS OF INSTALLATION

Care should be taken not to install the Milcor Turbine Ventilator in any pocket under a ridge, or behind any obstruction. Place it high enough to get the breeze from every direction. It should be set plumb vertical when installed and then absolute satisfaction is assured.

It is well to build condensation gutters into all ventilation bases which support Milcor Turbine Ventilators, since hot, humid air striking a cold ventilator causes moisture. These gutters should have vents opening out over the supporting sills.

STANDARD SPECIFICATIONS for MILCOR TURBINE VENTILATORS

The roof ventilator shall be Milcor Turbine Ventilators of the standard construction of the Milcor Steel Company, in sizes as shown in plans.

All ventilators shall be of standard weights of galvanized iron (or copper) as used by the Milcor Steel Company. All metal bases supporting Milcor Turbine Ventilators shall incorporate drip gutters to carry off condensation.

EXHAUST CAPACITIES OF MILCOR TURBINE VENTILATORS

Diam. of Throat	Wind Velocity 4 Miles per Hour	Wind Velocity 8 Miles per Hour	Approx. Weight
8 in.	17,300 cu. ft. per hr.	21,600 cu. ft. per hr.	20 $\frac{1}{2}$
10 in.	26,500 " " " "	32,500 " " " "	27 $\frac{1}{2}$
12 in.	38,600 " " " "	46,200 " " " "	38 $\frac{1}{2}$
15 in.	54,000 " " " "	69,000 " " " "	50 $\frac{1}{2}$
18 in.	85,200 " " " "	102,100 " " " "	85 $\frac{1}{2}$
20 in.	105,100 " " " "	125,600 " " " "	100 $\frac{1}{2}$

Diam. of Throat	Wind Velocity 4 Miles per Hour	Wind Velocity 8 Miles per Hour	Approx. Weight
24 in.	149,000 cu. ft. per hr.	185,000 cu. ft. per hr.	160 $\frac{1}{2}$
30 in.	225,000 " " " "	272,000 " " " "	225 $\frac{1}{2}$
36 in.	281,000 " " " "	330,000 " " " "	270 $\frac{1}{2}$
42 in.	324,000 " " " "	414,000 " " " "	460 $\frac{1}{2}$
48 in.	360,000 " " " "	473,000 " " " "	550 $\frac{1}{2}$

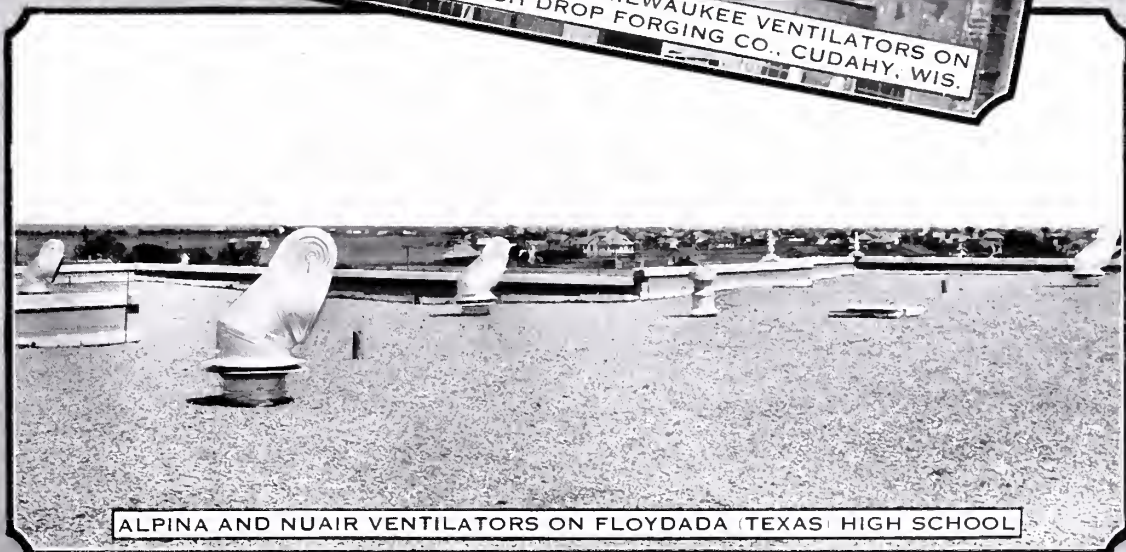


MILWAUKEE VENTILATORS
ON SCHOOL AT
CLINTON, WIS.

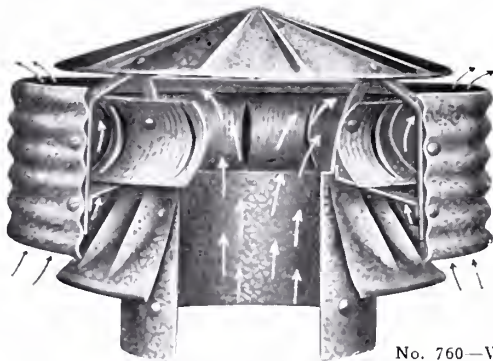


ALPINA AND MILWAUKEE
VENTILATORS, MASONIC TEMPLE
ELDORADO, ARKANSAS

ALPINA AND MILWAUKEE VENTILATORS ON
LADISH DROP FORGING CO., CUDAHY, WIS.



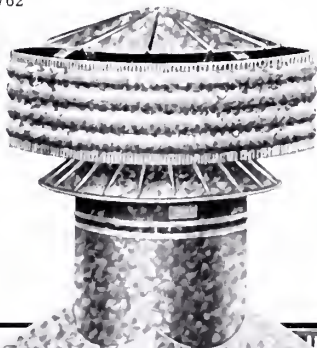
ALPINA AND NUAIR VENTILATORS ON FLOYDADA (TEXAS) HIGH SCHOOL



No. 760—With Steel Top.



No. 761—With Wired Glass Top.

No. 762
With
Base.

“Nu-Air” Ventilators

MILCOR Nu-Air Stationary Ventilators possess great exhaust capacity and strength. The sloping dome keeps out rain, snow and sleet. The corrugated weather-band adds to the strength and rigidity of Nu-Air and affords additional vacuum-creating power.

Outer air currents rush in between the weather band and the curved deflector. Acting at an angle of 45°, these currents travel upward and outward, thus constantly discharging a full volume of impure air through the ventilating shaft. Constant circulation of fresh air ensues.

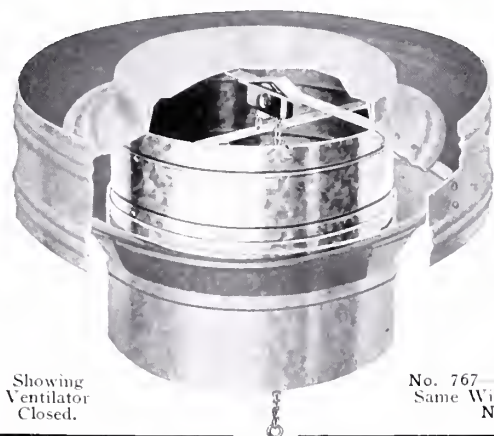
Sizes, Weights and Capacities:

(Capacities Indicate Cubic Ft. of Air Discharged Per Minute—Wind Vel. 5 Miles per Hr.)

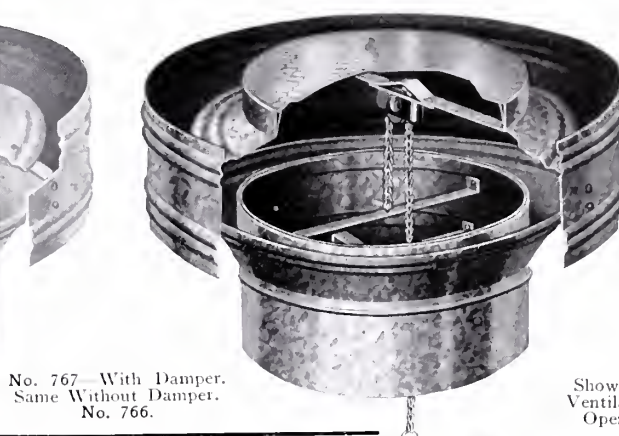
		10"	12"	14"	16"	18"	20"	24"	30"	36"	48"
No. 760	Weight (lbs.)	15	20	25	40	45	55	80	120	175	250
	Capacity	250	365	495	650	810	1000	1450	2250	3500	6000
No. 761	(Same Weights and Capacities as No. 760)										
No. 762	Weight	35	40	55	80	85	100	130	190	250	400
	(Same Capacities as No. 760)										

Furnished in Pure Copper, Galvanized Open Hearth Steel, Galvanized ARMCO Ingot Iron or Galvanized Coppered Metal. All Braces on galvanized grades are galvanized after formed.





Showing Ventilator Closed.



No. 767—With Damper. Same Without Damper. No. 766.

Showing Ventilator Open.

“Milwaukee Ventilators”

THE “Milwaukee” Stationary Ventilator, although simple in construction, is very efficient in its ventilating capacity. It requires no attention whatsoever. It is well made and extremely sturdy. The weatherband is beaded, top and bottom, to add to its rigidity.

Sizes, Weights and Capacities:

(Cubic Feet of Air Discharged per Minute—Wind Vel. 5 Miles per Hr.)

No.	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	40"	48"	60"	72"
765 Wt. (lbs.)	10	12	18	22	35	40	45	70	100	155	200	220	350	450
Capacity	130	140	160	250	388	500	625	900	1375	2000	2450	3500	6700	10690

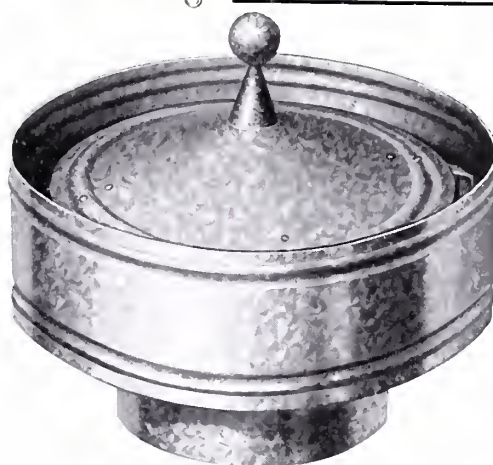
No. 766 (Weights and Capacities same as No. 765)

No. 767 (Weights and Capacities same as No. 765)

Furnished in Pure Copper, Galvanized Open Hearth Steel, Galvanized ARMCO Ingot Iron or Galvanized Coppered Metal. All Braces on galvanized grades are galvanized after formed.

The No. 767 Milwaukee Ventilator, as shown above, is made with Glass Top and Regulating Damper, which is operated by a chain running over a ball-bearing pulley. This damper closes by gravity and opens the ventilating shaft. Pulling the chain draws up the damper and closes the air shaft, partially or entirely at will, without shutting out any light.

No. 766 is the same as No. 767, except that No. 766 is not equipped with the Regulating Damper.



No. 765 With Steel Top.



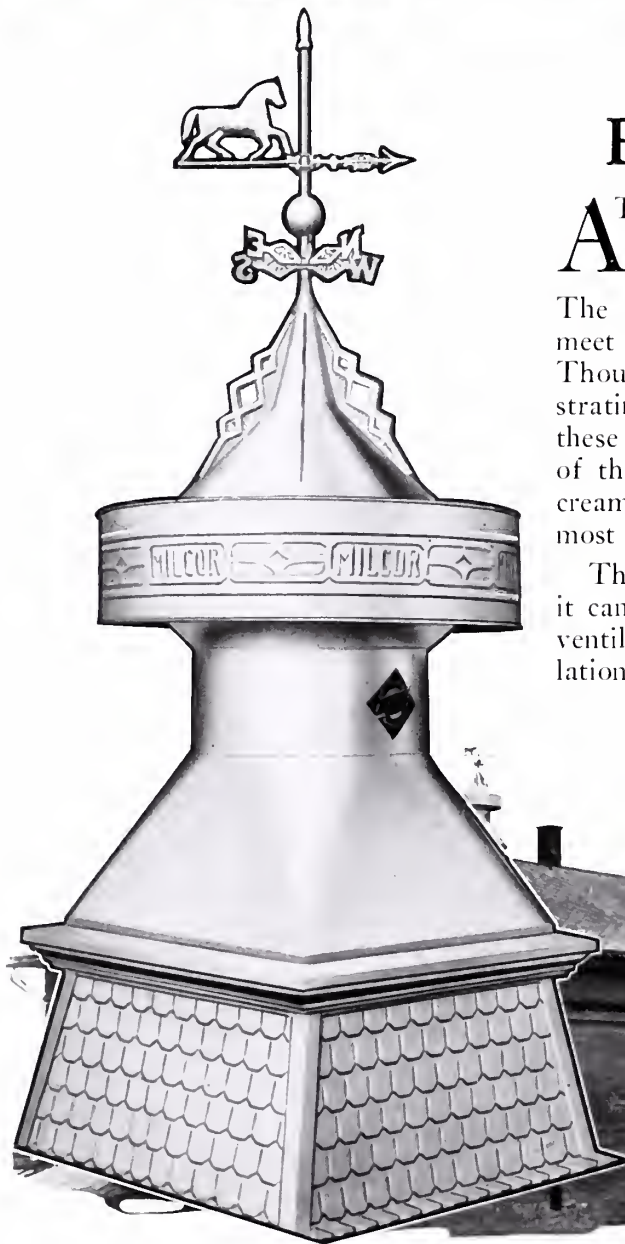


Ben Thelan's Farm,
Caledonia, Wis.

MILCOR Barn Ventilators

ATMOSPHERE of barns, stock buildings, creameries, dairies, etc., moisture-laden and heavy, demands a special type of ventilation. The "New Milcor" Ventilator was designed to meet the unusual requirements of such buildings. Thousands of these Ventilators have been demonstrating for years their efficiency on buildings of these types, especially in the leading dairy sections of the country where ventilation of stock barns, creameries and similar buildings is handled in the most scientific manner.

The New Milcor Ventilator is designed so that it can be used either with or without a complete ventilating system. Complete details for installation of adequate ventilating systems for various



buildings will be gladly furnished by our engineers, without cost or obligation, upon receipt of plans or blue prints of the building in question.

The mechanical superiority of the New Milcor Ventilator is indisputable.

The all steel base is an important feature — no wood whatsoever is used in these Ventilators. They are made from Prime Open-Hearth Steel, full weight. Full dimensions as advertised. All angle parts used are *Galvanized after formed*. Heavy brass rivets are used throughout. The tapered steel base is designed on a line with the balance of the Ventilator, giving it perfect symmetry. Each Milcor Ventilator is equipped with Cardinal Points (North, South, East and West).

An extra heavy wind band is used, reinforced with $\frac{1}{4}$ -inch galvanized rod around edges. The galvanized conical-shaped steel "roof" is rainproof and snowproof, properly pitched for perfect ventilation. Galvanized wire screen makes this Ventilator bird-proof.

Edges of base are turned under, making three thicknesses of heavy galvanized steel, to insure great strength where most needed. Crimped metal corners also add strength. The flared metal base, stamped with shingle design, increases rigidity and contributes to the good appearance of the Milcor Ventilator.

Always prepared with brand new coat of Satin Aluminum Paint before shipping. Crated carefully.

In every detail, here is an unusually high-grade ventilator.

See table on next page for number required on various sizes of buildings.

Dimensions and Weights:

No.	Flue	Base Molding	Actual Base	Weight
100	13"	24 x 24"	27 x 27"	100 lbs.
150	16"	28 x 28"	32 x 32"	125 lbs.
200	20"	35 x 35"	39 x 39"	150 lbs.
300	24"	42 x 42"	46 x 46"	200 lbs.
350	28"	47 x 47"	50 x 50"	250 lbs.
400	30"	52 x 52"	54 x 54"	275 lbs.
500	36"	62 x 62"	65 x 65"	300 lbs.

Lightning Rod Attachment at slight extra charge.



Milcor Ventilators on Barn at the Muse Farm, Libertyville, Illinois.

Proper ventilation for various sizes of barns is assured by following this table:

Size of Barn—Length	Size and Number of Ventilators Required	
40 to 50 feet	One	No. 350
60 to 70 feet	Two	No. 350
80 to 100 feet	Three	No. 350 or
	Three	No. 400
110 to 130 feet	Four	No. 400
140 to 160 feet	Five	No. 400

The "Milcor" Ventilator is made in three sizes, without base, for silos, as follows:

No. 16, with 16-inch flue, weighing	65 lbs.
No. 20, with 20-inch flue, weighing	80 lbs.
No. 24, with 24-inch flue, weighing	125 lbs.

The same style of "Milcor" Ventilator that was designed for barns can be used for Hog and Poultry House ventilation, without base.

The extra flaring base, which affords ample room for hay track when installed on barns, can be eliminated when used for hog and poultry houses.

Made in four sizes, as follows:

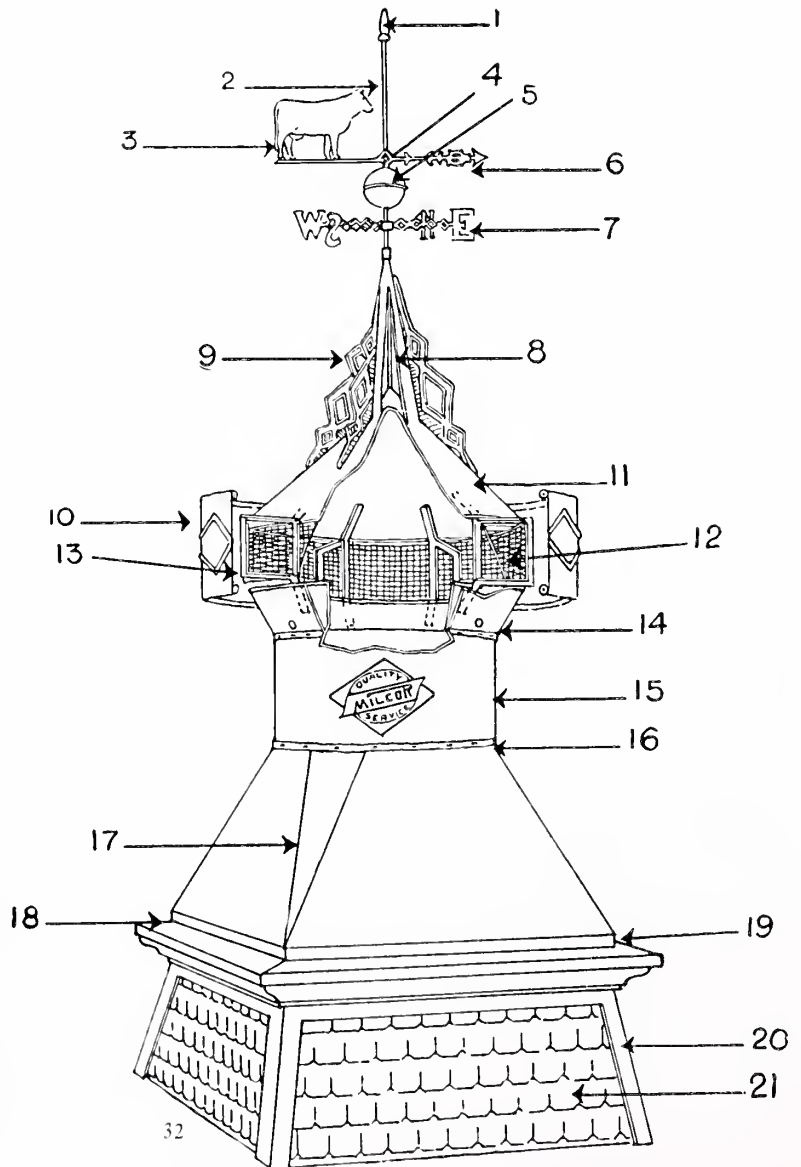
No. 100-T—13-inch flue, weight,	60 lbs.
No. 150-T—16-inch flue, weight,	75 lbs.
No. 200-T—20-inch flue, weight,	90 lbs.
No. 300-T—24-inch flue, weight,	140 lbs.

Details of Construction of "New Milcor" Ventilator

1. Heavy Ornamental Cone, removable to permit use of different style of vane.
2. Heavy Galvanized Pipe extending into cone, insuring solidity.
3. Full-Bodied, Stamped Vane with Satin Aluminum finish. Will not tarnish.
4. Galvanized Malleable Ring. Cannot become "ice-bound."
5. Ornamental Zinc Ball. Cannot break or deteriorate.
6. Arrow, Satin Aluminum finished and weighted to balance animal vane. Responds to slightest breeze.
7. Malleable Iron Compass Points.
8. Galvanized Cone. Braising No. 2.
9. Four Heavy Galvanized Steel Braces strengthen vane rod and add to beauty.
10. Extra Heavy Ornamental Wind Band, reinforced with ¼-inch galvanized rod in edges.
11. Conical Galvanized Steel Roof. Rain and snowproof, properly pitched for perfect ventilation.
12. Galvanized Wire Screen makes ventilator "birdproof."
13. Heavy Wrought Iron Braces, galvanized after formation.
14. Steel Flange adds to ventilating efficiency.
15. Smooth Round Flue.
16. Copper Rivets insure rustproof connection.
17. Flaring Body, of two piece heavy galvanized steel. Corners closely riveted, insuring stiff, solid construction.
18. Galvanized Bolts to fasten Ventilator to base.
19. Turned Under Edges (three thicknesses of heavy galvanized steel) insure giant strength exactly where required.
20. Crimped Material strengthens corners.
21. Flare Base, stamped with shingle design, which adds rigidity and artistic effect.

Note the ornamental molding surmounting the flare base, which gives a finished artistic appearance to the ventilator.

Prints of the Milcor Barn Ventilator, drawn to ¼ or ⅝-inch scale, will be furnished for architects who desire to use them in draughts of barn plans. They can be placed under your tracing paper, or cloth for tracing into your plans without the customary preliminary measurements and figuring.



MILCOR

“Puttyless” and Puttied Skylights

MILCOR “Puttyless” Skylights represent a distinct step forward in skylight construction. Because of the unique design of the metal units of the “Puttyless” line, the glass is held securely in place, permanently leak proof, without the use of any putty.

Putting glass into ordinary skylights requires skill and the time and labor required to accomplish a proper installation is a considerable item. This wasted time and expense is avoided with Milcor “Puttyless” Skylights.

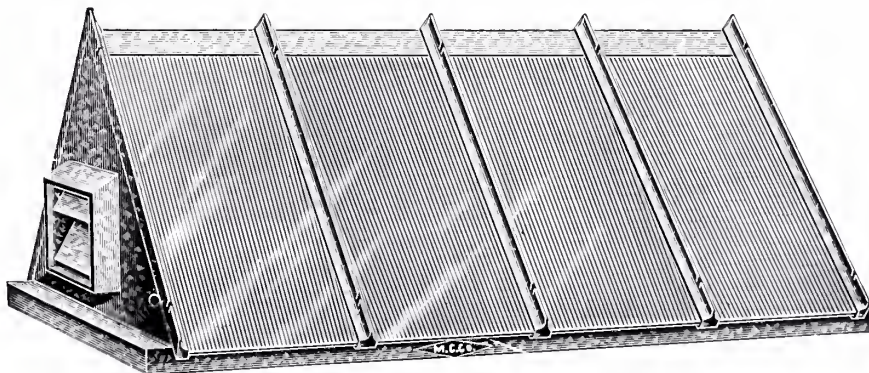
Replacement of Milcor uniform glass units is a very simple task on “Puttyless” Skylights. Anyone can do it in a few minutes.

But to replace damaged glass in a puttied skylight involves considerable work — digging out the hardened putty, scraping all edges clean, fitting in the glass and re-puttying. It demands a skilled workman to produce a satisfactory replacement. Contrast that bother and expense with the simplicity and economy of merely fastening the copper clips of the “Puttyless” around the glass.

The complete line of Milcor “Puttyless” Skylights can also be made up in Standard Style (Laid-in-Putty) if desired. We are also prepared to furnish special sizes, made up to Architects’ or Contractors’ specifications, in either Puttyless or Puttied Construction.

No. 895
MILCOR
“Puttyless”
Skylight

Double Pitch — with Louvre ventilator on ends. Made of 26-gauge Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized Sheets, or Pure Copper — in all standard sizes from 3 feet square to 10 feet square. Special sizes as specified.



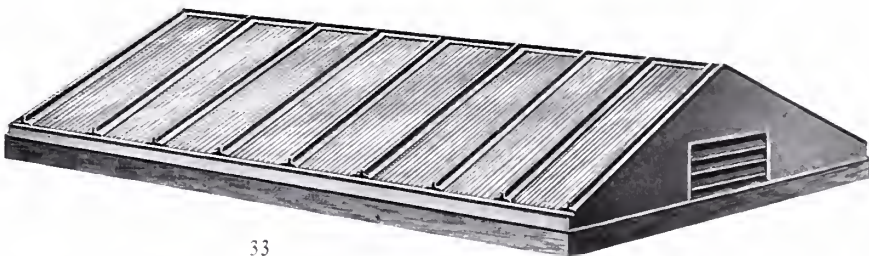
ONE of the popular Double Pitch “Puttyless” Skylights. Ribs and cap, fastened together with copper clips, or cleats, extend from the sash through the ribs and are then clinched. This method provides for expansion and contraction and makes it very easy to replace glass when necessary.

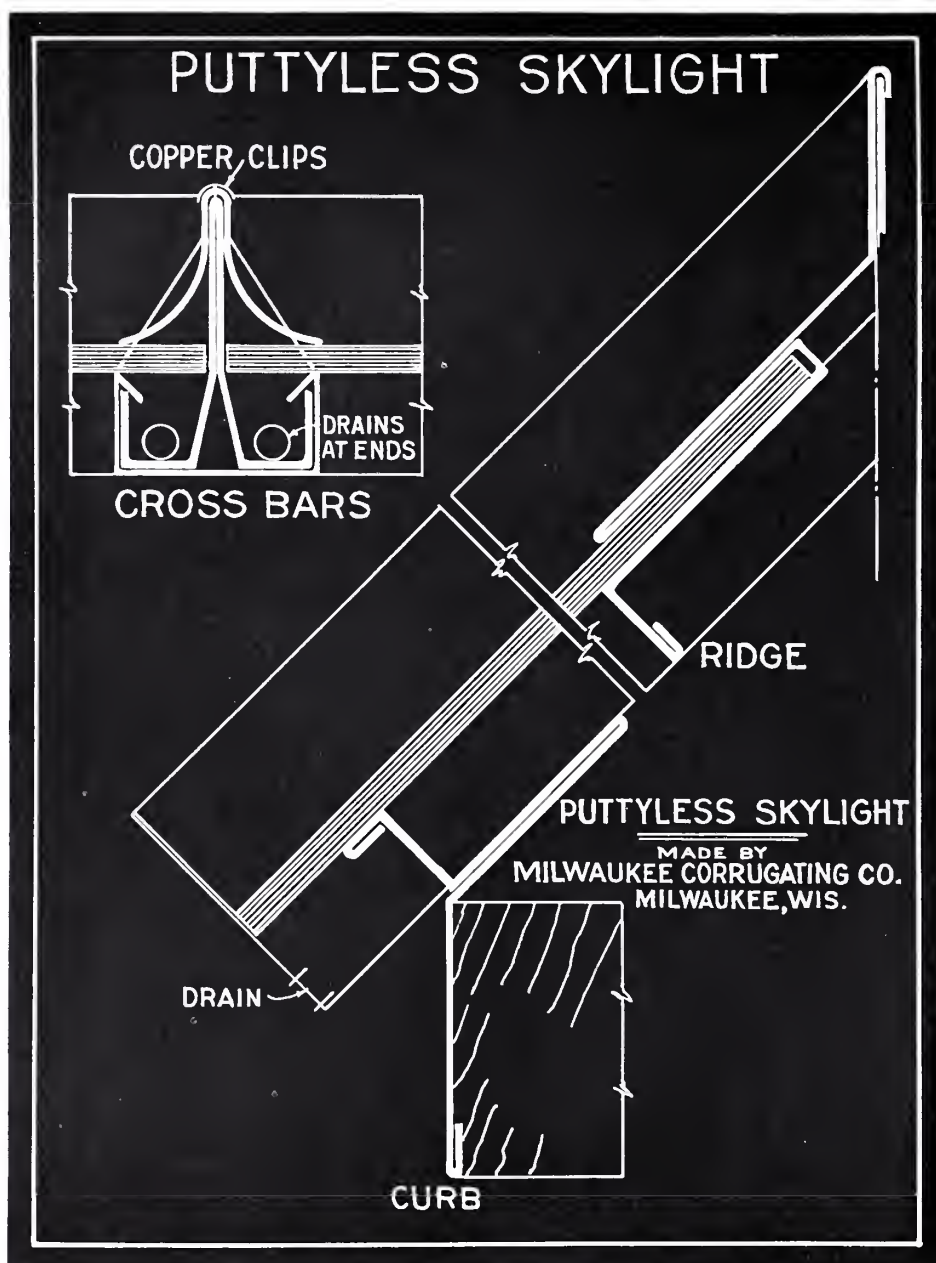
Louvre Ventilators in both ends — snow tight, waterproof. Frames are made to fit over wood curb.

All Skylights are furnished with ribbed glass unless otherwise ordered. Wired glass available if desired.

No. 881
MILCOR
Standard
Skylight

Laid-in-Putty — double pitch — same style and furnished in same sizes and grades as No. 895 (see description above) with exception of Puttyless features.





Details of the "Puttyless" Feature

THE cross sectional detail of the Puttyless Bar construction shows how the Copper Clips, fastened over the cross bars, securely hold the glass in position, leakproof, without the use of any putty. The above details show the practical provision that is made in all Milcor Skylights for condensation of atmospheric moisture and drains for rain.

All Puttyless and other Milcor Skylights are made water-tight and are sturdily built. Bars are riveted and soldered, making rigid, enduring joints.

It is a simple matter to replace damaged glass in Puttyless Skylights and it can be done quickly, without special tools. The Puttyless line of Skylights is recommended as the most practical on the market.

No. 894

MILCOR
"Puttyless"
Skylight

Single pitch—made of 26-gauge Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized Sheets or Pure Copper—in all standard sizes from 3 feet square to 8 by 14 feet. Special sizes can be made as specified.



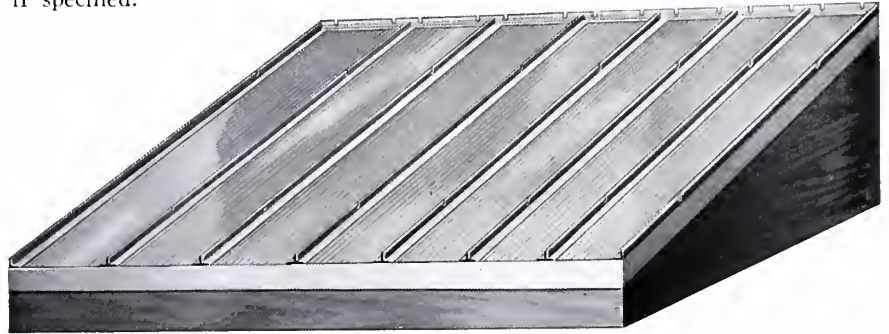
A SINGLE-PITCH Puttyless style, designed for curb having at least one-half pitch. Pitch may run long way or short way of skylight, as specified. This skylight can be hinged where required, to be used as a scuttle. Equipped with condensation gutter—snow proof and water tight. Frames made to fit over wood curb. Same Puttyless details as No. 895.

Furnished with ribbed glass unless otherwise ordered, or wired glass, if specified.

No. 880

MILCOR
Standard
Skylight

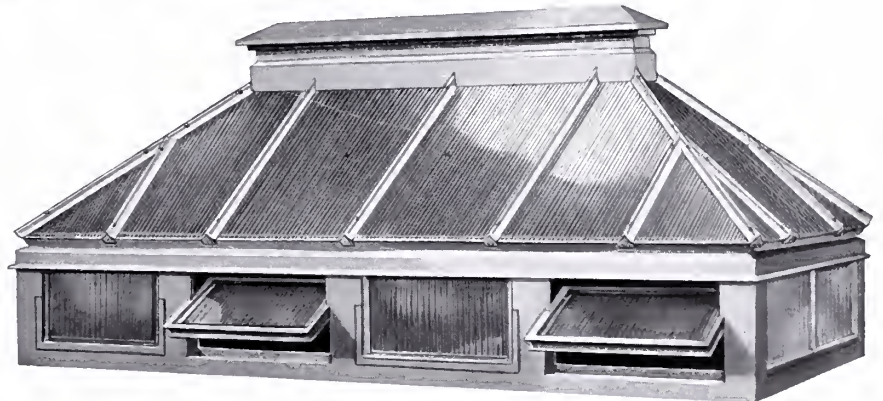
Laid-in-Putty. Possesses similar general characteristics and is made in same sizes and grades as the No. 894 (see description above) with exception of the puttyless feature. Can be mounted on curb of any desired pitch.



No. 899

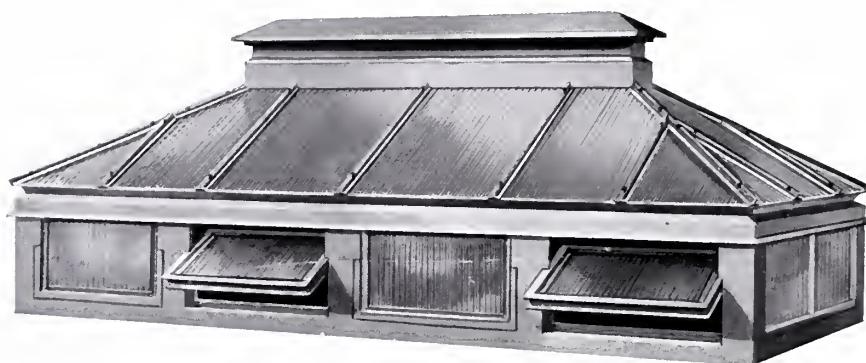
MILCOR
"Puttyless"
Skylight

Hipped-turret type with ridge Ventilator. Made of 26-gauge Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized sheets or Pure Copper—in all standard sizes from 3 feet square to 8 by 14 feet. Special sizes can be made up as required.



THIS Puttyless Skylight with its hipped turret, ridge ventilator and movable side sash is a highly desirable, efficient and attractive combination. The Puttyless feature on this type of Skylight is particularly valuable. The side sash are pivoted at center of sides so as to open easily from the inside, and are equipped with a good locking device. Condensation gutter built into this model as it is in all Milcor Skylights.

Furnished with ribbed glass unless otherwise ordered. Wired glass if specified.



No. 885
MILCOR
Standard
Skylight

Laid-in-Putty. Has all the features of the No. 899 (see description on preceding page) except that its glass is not fastened by the Puttyless method. Made in same sizes and grades as the No. 899.



No. 898
MILCOR
"Puttyless"
Skylight

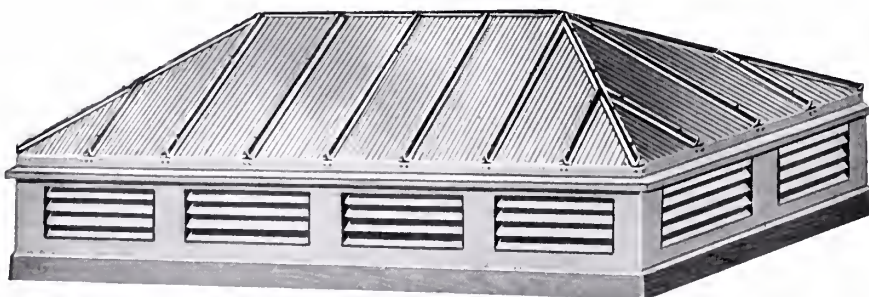
Hipped-turret type with stationary Louvre Ventilators on sides and ends. Made of 26-gauge Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized sheets or Pure Copper—in all standard sizes from 3 feet square to 8 by 14 feet. Special sizes can be made up as required.

See page 34 for Puttyless Details.

THIS Puttyless Hipped Turret Skylight is quite similar to the No. 899 described on page 35, except that this 898 has no ridge ventilator and its stationary Louvre Ventilators take the place of the swinging side sash of the 899.

The Puttyless feature is embodied in this Skylight—the ribs that hold the glass in place are fastened with copper cleats from the sash through the ribs and then clinched, thus providing for contraction and expansion and making glass replacements easy. Simple in construction, sturdy, cannot leak and is inexpensive. All Milcor Skylights have condensation and ventilation gutters.

Furnished with ribbed glass unless otherwise ordered. Wired glass if specified.



No. 884
MILCOR
Standard
Skylight

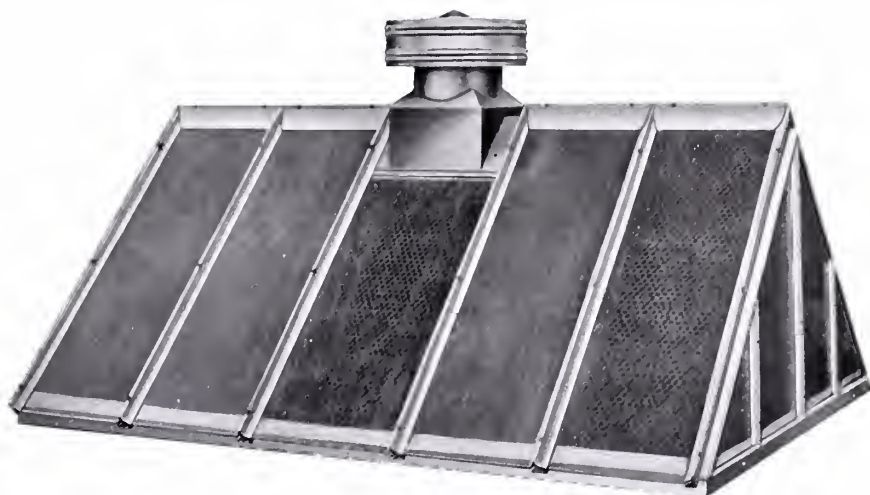
Laid-in-Putty. This Skylight is the same in every respect as the No. 898, described above, with the exception of the Puttyless feature. Made in the same sizes and grades as No. 898.

No. 896

MILCOR**"Puttyless"****Skylight**

Double Pitch — made of 26-gauge Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized Sheets or Pure Copper—in all standard sizes from 3 feet square to 10 feet square and 8 x 14 feet. Special sizes can be made as specified.

See page 34 for Puttyless Details.



THE above Puttyless Model is a combination of a skylight and a tubular ventilator for buildings where both features are desirable in one unit. The Puttyless feature is an important advantage on this type of skylight. Condensation and ventilation gutters built into this model, as in all Milcor Skylights.

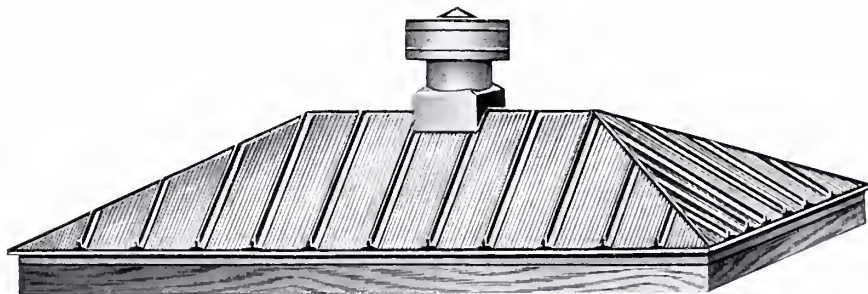
Regularly equipped with ribbed glass but furnished, if desired, with wired glass.

When giving measurements always designate from out to out of wood curb.

No. 883

MILCOR**Standard****Skylight**

Laid-in-Putty — similar in style and made in same sizes and grades as No. 896 (see description above) except for Puttyless feature and hipped ends. Furnished with Ventilator and Damper unless otherwise ordered but is also carried without Ventilator.



No. 897

MILCOR**"Puttyless"****Skylight**

Double pitch and hipped — made of 26-gauge Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized Sheets or Pure Copper—in all regular sizes from 3 feet square to 10 feet square and 8 by 14 feet. Special sizes can be made as specified.

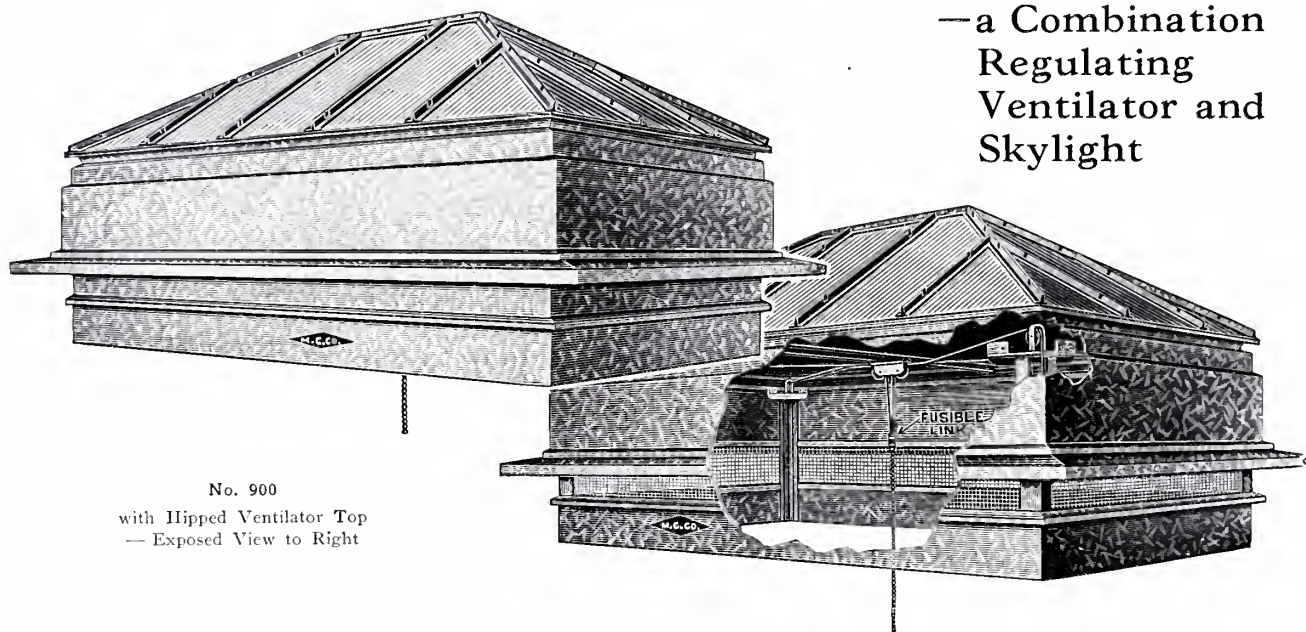
See page 34 for Puttyless Details.



The No. 897 has all the features of other Milcor Puttyless Skylights plus the advantage of the additional light afforded by the hip construction. Frames are made to fit over wood curb.

MILCOR "Torpedo" Ventilating Skylight

—a Combination
Regulating
Ventilator and
Skylight

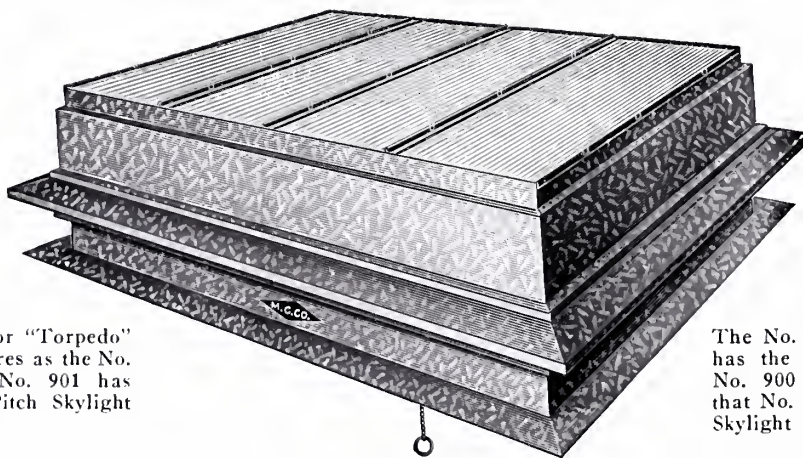


No. 900
with Hipped Ventilator Top
— Exposed View to Right

THE unique efficiency of the Milcor "Torpedo," both as a Ventilator and as a Skylight, appeals to Architects and Builders for a wide variety of types of buildings.

Its hipped glass top lets in an abundance of diffused light, as a good skylight should, and as a Ventilator it has many highly com-

mendable features. Its movable shutter regulates the amount of ventilation. The controlling mechanism is simple and easy to operate — you merely pull down the chain or release it according to the amount of opening desired. The ventilating opening is screened to prevent entrance of birds, sparks or embers.



The No. 901 Milcor "Torpedo" has the same features as the No. 900, except that No. 901 has merely a Single Pitch Skylight top.

The No. 902 Milcor "Torpedo" has the same features as the No. 900 and No. 901, except that No. 902 has a Double Pitch Skylight top.

The automatic fireproof feature of the "Torpedo" is one of its most important advantages. In the illustration on page 38, notice the "fusible link." In case of fire, if the Ventilator is open, the heat will cause this link to separate or disconnect. The shutter will then drop automatically from its own weight, closing the ventilator opening and shutting

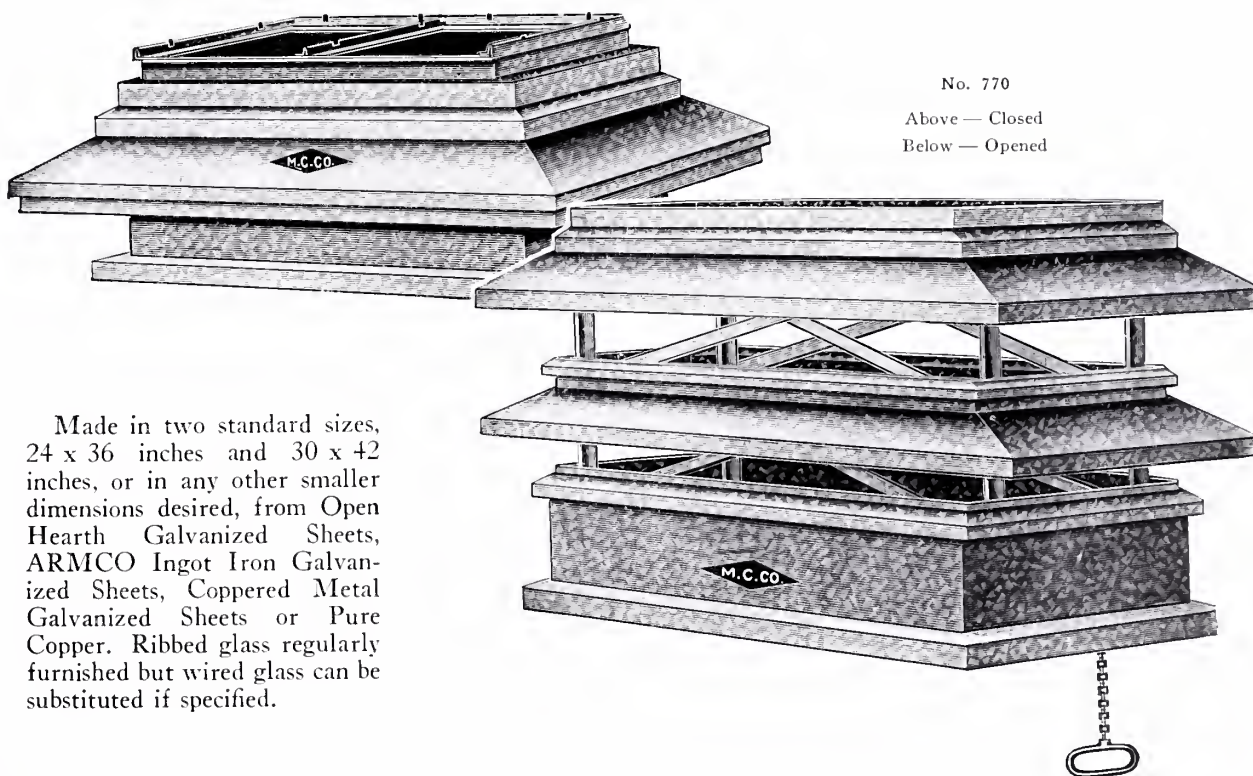
off the draft, thus lessening the possibility of spreading the fire.

Milcor "Torpedo" Ventilating Skylights made in 14 sizes, from 3 feet square to 6 by 10 feet. Made from 26-gauge Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized Sheets or Pure Copper — with Ribbed glass, or if specified, with wire glass.

MILCOR Collapsible Ventilators with Glass Tops

NO. 770 Milcor Collapsible Ventilators are ideal for inner halls or courts of apartment buildings, hotels, etc., and have been used extensively in Motion Picture Theatres over the Film Operating Booth where both light and ventilation are decidedly necessary.

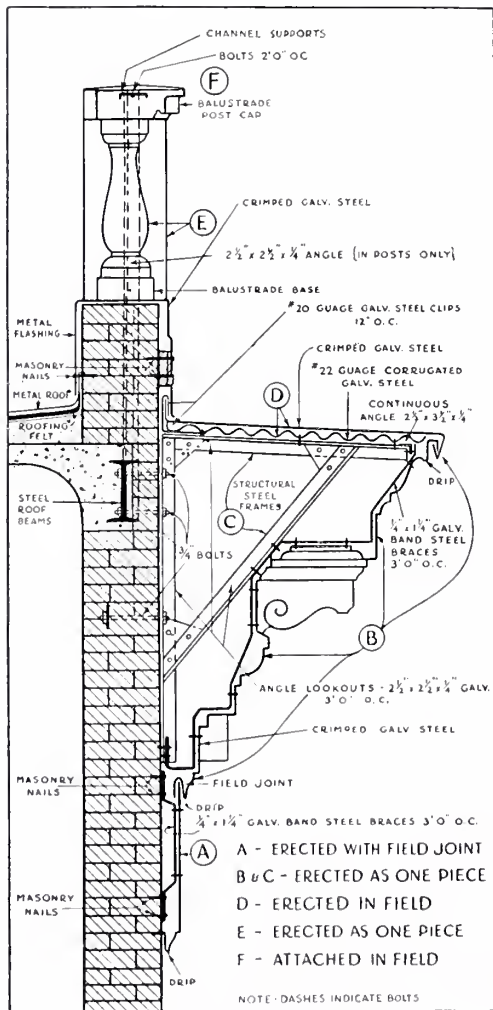
The movable sections of the Ventilator are raised and lowered by a chain working over a system of pulleys. The volume of ventilation can be regulated by pulling or releasing the chain. Simple and rugged in construction and very effective as a combined Ventilator and Skylight.



Made in two standard sizes, 24 x 36 inches and 30 x 42 inches, or in any other smaller dimensions desired, from Open Hearth Galvanized Sheets, ARMCO Ingot Iron Galvanized Sheets, Coppered Metal Galvanized Sheets or Pure Copper. Ribbed glass regularly furnished but wired glass can be substituted if specified.



Sheet Metal Cornices in Steel, ARMCO Ingot Iron, Zinc or Copper



SAFETY is such an important element in considering ornamental cornices that architects have welcomed particularly the development of modern Milcor Metal Cornices. Heavy, ornamental cornices of stone or masonry are mighty dangerous . . . and they are expensive. Sheet metal cornices are economical, permanent and safe.

Designing and building cornices has become a particular feature of our business. Varieties of fine designs are available from stock. Then too, our facilities enable us to design special cornices and architectural ornaments ranging from the smallest units to large, elaborate pieces, reproducing faithfully in metal the minutest details of original drawings.

Send us your plans, sketches and specifications. Estimates will be furnished promptly. This service does not obligate you in the least, and it should help you sell more Milcor Sheet Metal Cornices.

Milcor Cornices are furnished in large sections, complete, ready to erect. All brackets, modillions, and dentils are riveted and soldered to the cornices and the mouldings run through.

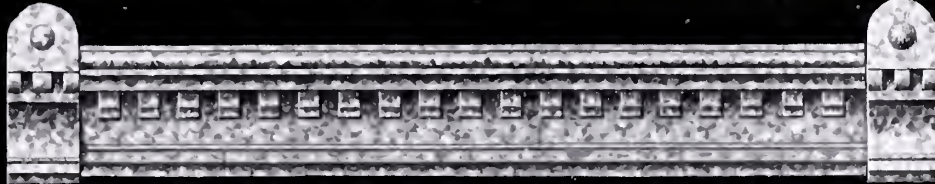
While we are showing a few of the many Milcor Cornices on the following pages, please remember that we have complete facilities and a thoroughly trained organization for designing and producing special designs or types of cornices or other architectural sheet metal work. A consultation will not obligate you or cost you anything.

← This detail drawing was developed from data embodied in a booklet on "Standard Specifications for the Fabrication and Setting of Sheet Steel Cornices", prepared by the Sheet Steel Trade Extension Committee, Oliver Bldg., Pittsburgh, Pa. Copies of this valuable booklet may be secured from that source or from us.

MILCOR
CORNICES

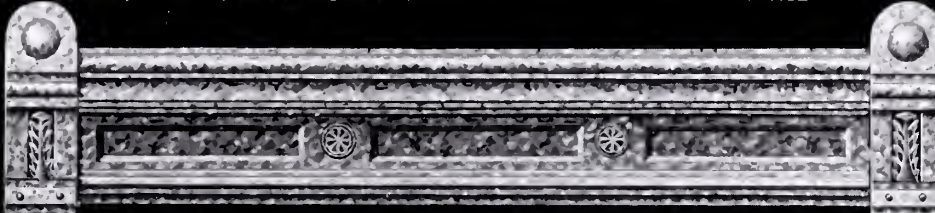
NO. 312 CORNICE
HEIGHT 18 IN., PROJECTION 8 IN.

NO. 312 END BLOCKS
12 IN. FACE



NO. 303 CORNICE
HEIGHT 26 IN., PROJECTION 12 IN.

NO. 303 END BLOCKS
12 IN. FACE



NO. 306 CORNICE
HEIGHT 30 IN., PROJECTION 15 IN.

NO. 306 END BLOCKS
12 IN. FACE



NO. 408
URNS

NO. 316 CORNICE
HEIGHT 36 IN., PROJECTION 20 IN.

NO. 316 END BLOCKS
12 IN. FACE

↑ PROFILES

WALL LINE

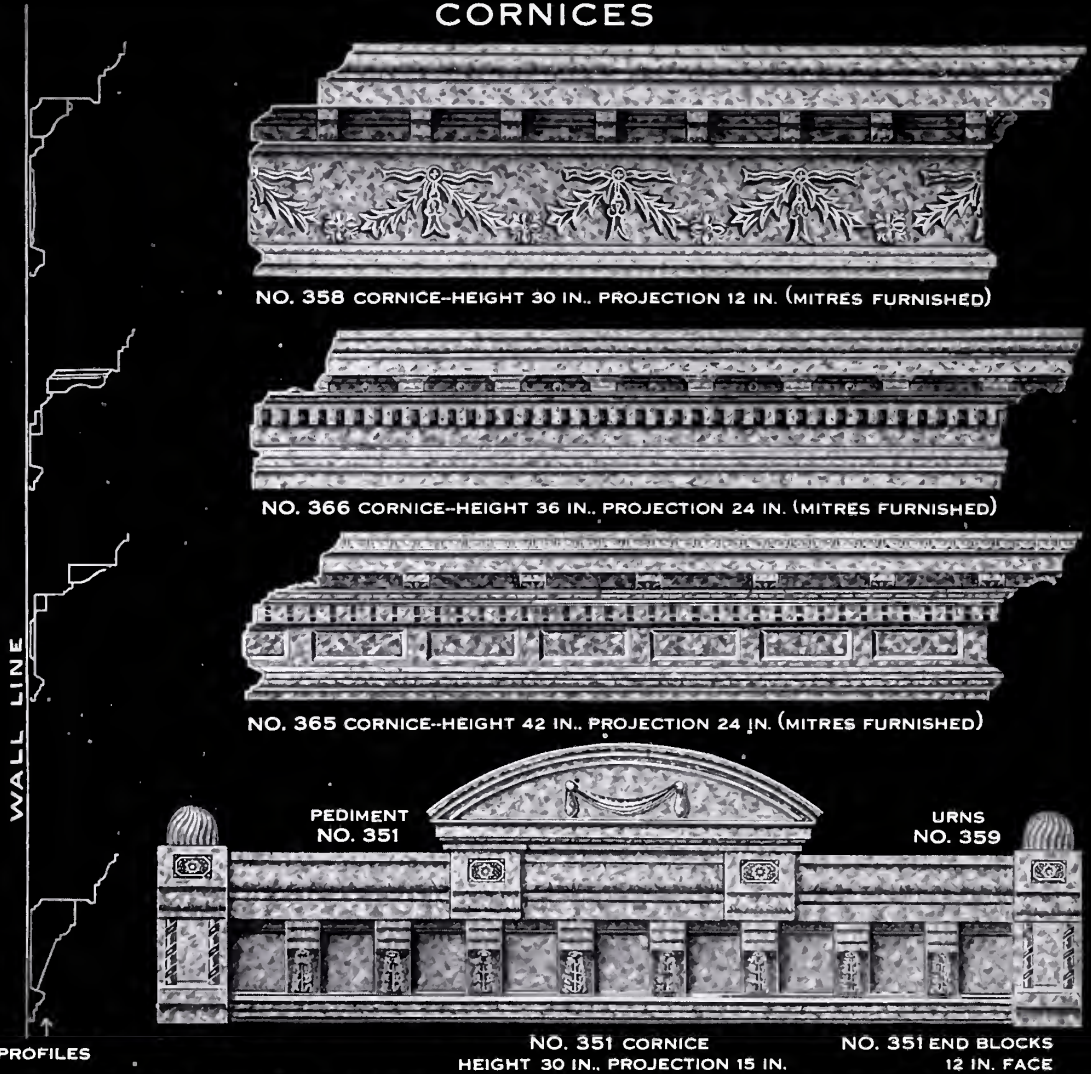
Stock Designs of Milcor Sheet Metal Cornices

A FEW of the many stock designs which we are prepared to furnish on short notice are shown here and on the next two pages, for use where specially designed cornices are not required. Combinations of various designs can be made as desired.

Suggestions for ordering: Order by number. If Cornice Cover is desired, mention thickness of wall and height of wall-extension. Mention number of mitres; specify whether square, or give exact angle, and whether inside or outside. Specify finish wanted at ends, whether "return", "double return", or "end blocks". Indicate whether cornice is to be built *into* or put on after wall is complete.

Cornices	Height	Projection	End Blocks	Face
No. 312.....	18"	8"	No. 312.....	12"
No. 303.....	26"	12"	No. 303.....	12"
No. 306.....	30"	15"	No. 306.....	12"
No. 408.....	36"	20"	No. 408.....	12"

MILCOR CORNICES



Stock Designs of Milcor Sheet Metal Cornices

A FEW of the many stock designs which we are prepared to furnish on short notice are shown here and on pages 41 and 43, for use where specially designed cornices are not required. Combinations of various designs can be made as desired.

Suggestions for ordering: Order by number. If Cornice Cover is desired, mention thickness of wall and height of wall-extension. Mention number of mitres; specify whether square, or give exact angle, and whether inside or outside. Specify finish wanted at ends, whether "return", "double return", or "end blocks". Indicate whether cornice is to be built *into* or put on after wall is complete.

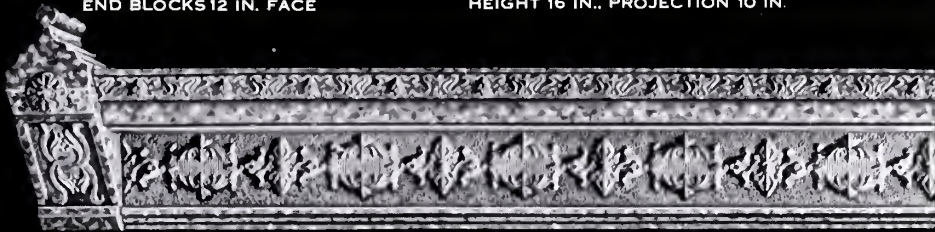
Cornices	Height	Projection	Mitres
No. 358.....	30"	12"	No. 358 Inside or Outside.....
No. 366.....	36"	24"	No. 366 Inside or Outside.....
No. 365.....	42"	24"	No. 365 Inside or Outside.....
No. 351.....	30"	15"	No. 351 End Block 12" Face...

MILCOR EMBOSSED CORNICES



NO. B456
END BLOCKS 12 IN. FACE

NO. B456 CORNICE
HEIGHT 16 IN., PROJECTION 10 IN.



NO. B454
END BLOCKS 12 IN. FACE

NO. B454 CORNICE
HEIGHT 22 IN., PROJECTION 14 IN.



NO. B459
END BLOCKS 12 IN. FACE

NO. B459 CORNICE
HEIGHT 20 IN., PROJECTION 10 IN.



NO. B453
URN

NO. B453 CORNICE
HEIGHT 36 IN., PROJECTION 15 IN.

NO. B453
END BLOCKS 12 IN. FACE

LETTERS 6x8 IN.

WALL LINE

↑
PROFILES

Stock Designs of Milcor Sheet Metal Cornices

A FEW of the many stock designs which we are prepared to furnish on short notice are shown here and on pages 41 and 42, for use where specially designed cornices are not required. Combinations of various designs can be made as desired.

Suggestions for ordering: Order by number. If Cornice Cover is desired, mention thickness of wall and height of wall-extension. Mention number of mitres; specify whether square, or give exact angle, and whether inside or outside. Specify finish wanted at ends, whether "return", "double return", or "end blocks". Indicate whether cornice is to be built *into* or put on after wall is complete.

Cornices	Height	Projection	End Blocks	Face
No. B456.....	16"	10"	No. B456.....	12"
No. B454.....	22"	14"	No. B454.....	12"
No. B459.....	20"	10"	No. B459.....	12"
No. B453.....	30"	15"	No. B453.....	12"



MILCOR

Sheet Metal Marquees or Canopies

Superior to Heavy, Clumsy, Cast Metal Marquees

THE heavy cast iron Marquees over entrances to buildings are no longer in vogue. That type of Marquee was clumsy in appearance, dangerous because of its ponderous weight, unduly expensive, difficult to erect and altogether impractical for many buildings.

Milcor Sheet Metal Marquees, or Canopies, eliminate all these objectionable features. They permit a fineness of design which it is impossible to obtain from other materials. They weigh only a fraction as much as cast iron types, thus relieving the building of considerable strain and making the entrance safer. When made of Pure Copper, Milcor Marquees are everlasting. When made of Open Hearth Galvanized Steel or Galvanized Coppered-Metal, they can be preserved indefinitely by occasional painting—less frequent painting than is ordinarily required for cast iron types.

In spite of better appearance and such important practical advantages, Milcor Metal Marquees cost only a fraction of the price of cast iron Marquees.

We have specialized on this type of work and can point to many fine examples where much money was saved and unequalled artistic effects were produced by our methods. We are in position to submit appropriate designs and work out all details for any style of building if front dimensions and sizes of openings of structure are specified. Or we can follow the architect's layout and details precisely.

We build Marquees complete, ready to erect. Write for specific information and estimates whenever you have a Marquee problem to solve.

Illustrations of typical installations are shown on the next few pages.



THESE two Milcor Marquees over entrances to the famous Milwaukee store of Gimbel Brothers, continue to attract much admiration. They are true works of art and their lace-like designs in pure copper will survive the building itself.

While expressing quality and good taste in the most impressive manner, it is particularly interesting to know that the Milcor method of adapting pure copper Architectural Ornaments to the Gimbel building saved more than \$7500.00 as compared with the original plans for architectural ornamentations, crestings, friezes, panelling, etc.

The units used in the cresting shown here are illustrated in detail on Page 60.

Many modern, dignified, beautiful, distinctive combinations are available in the Milcor line of Architectural Ornaments and Marquees. We shall be glad to confer with architects, contractors or sheet metal men at any time.

In addition to fine appearance, Milcor Marquees and Architectural Ornaments contribute safety and permanence to the buildings they adorn.



SCHUSTER'S Stores in Milwaukee present fine examples of the dignified quality-impressions conveyed by Milcor Marquees and Architectural Ornaments. There is nothing ornate or offensive in the Marquee shown below, which even the most

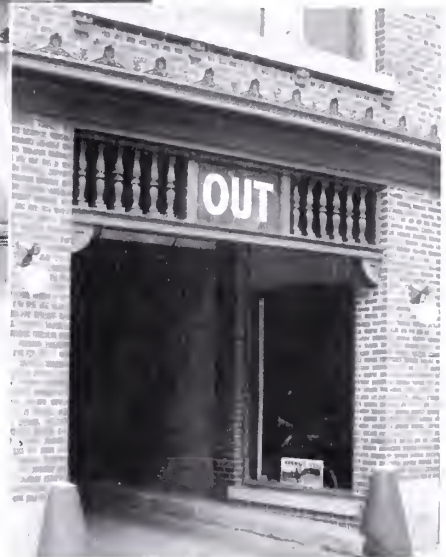
aesthetic critic would admire for its beautiful simplicity. We offer a valuable consulting service along with our modern stock designs . . . or we can develop any special designs desired. We welcome opportunities to discuss your problems at any time.





ANOTHER example of the efficacy of Milcor Pure Copper or Zinc Architectural Ornaments is shown in the insert below, a garage exit. Located in a residential district this building has been made pleasingly acceptable to the community it serves.

Here is another Milcor Marquee that pays dividends in attracting trade and satisfying tenants. The standing seam, pure copper sloping canopy, or Marquee, with the dignified copper crestings impresses everyone with its correctness and propriety.

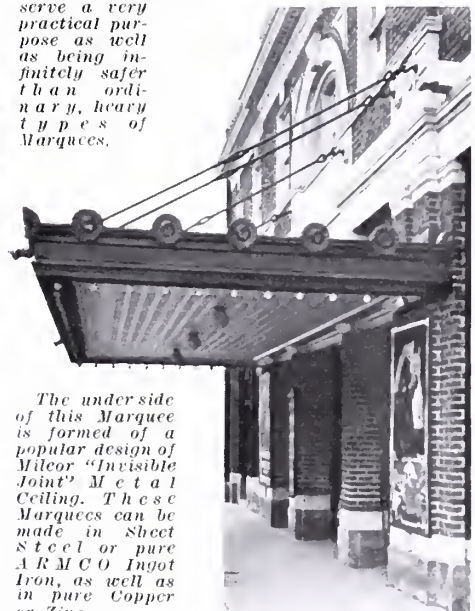


It pays to trim a building this way. Milcor can help you obtain similarly desirable effects.

THEATRE Marquees in a wide variety of attractive designs are available in the Milcor line. They are appropriate on the finest buildings and not only do they enhance the appearance of the entrance but they serve a very practical purpose as well as being infinitely safer than ordinary, heavy types of Marquees.



This Milcor Marquee over the entrance of The Ardmore apartment hotel in Milwaukee has the desired ponderous appearance in keeping with the general architectural effect of the building, but in actual weight this Marquee is comparatively light . . . therefore safe! And it will last forever, because it's made of pure copper. See Page 70 also, and consult Milcor for suggestions on suitable Architectural Metal Trim.



The under side of this Marquee is formed of a popular design of Milcor "Invisible Joint" Metal Ceiling. These Marquees can be made in Sheet Steel or pure ARMO Ingot Iron, as well as in pure Copper or Zinc.

"Invisible Joint" TRADE MARK Ceilings and Side Walls

PRACTICAL advantages not obtainable from any other type of ceiling construction are embodied in Milcor Invisible Joint Metal Ceilings. They are fire-safe, permanent crack-proof, easy to erect, artistic and economical. They can never sag, crack or fall off. They are not affected by heat, cold or dampness.



A single nail holds all four plates where four corners overlap.

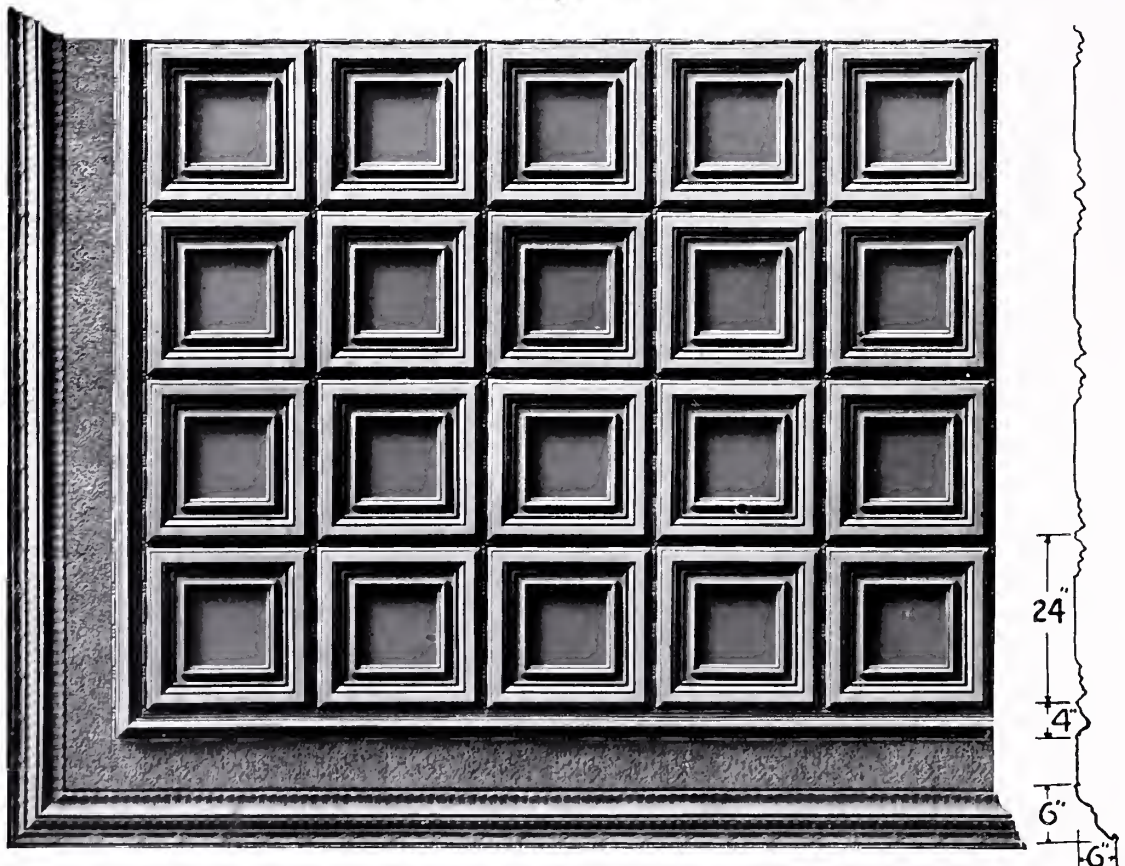
A wide variety of designs and combinations are available — carried in stock for immediate shipment. Just a few of these designs are shown here. A complete portfolio of designs will be sent on request.

Practical suggestions for Measuring and Erecting Invisible Joint Ceilings are given on pages 54 to 56.

The Nail Holes are Die Cut, Clean and Smooth.

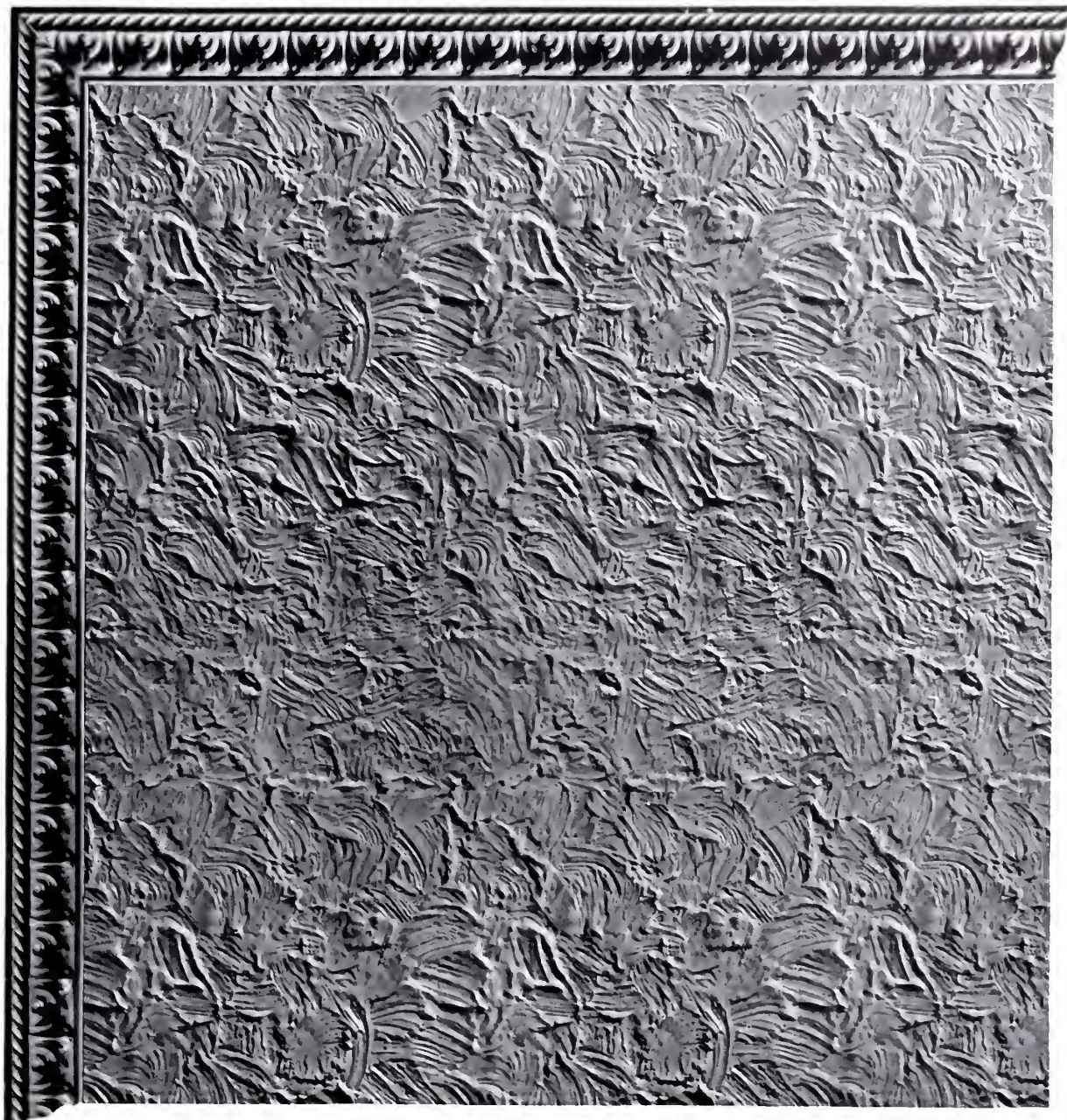


The Beads are re-pressed, making details bold.



Colonial Design No. 2735 —

Cornice, No. 2432.
Molded Filler, No. 2244.
Field Plate, No. 2700.



Patent Applied for

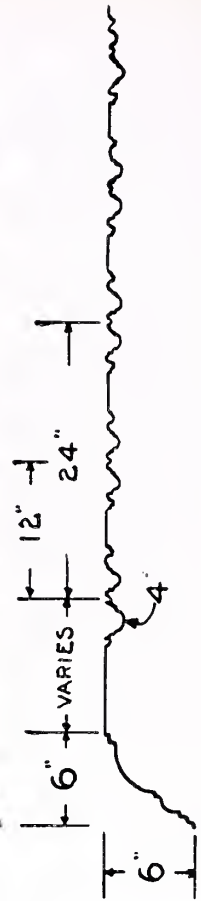
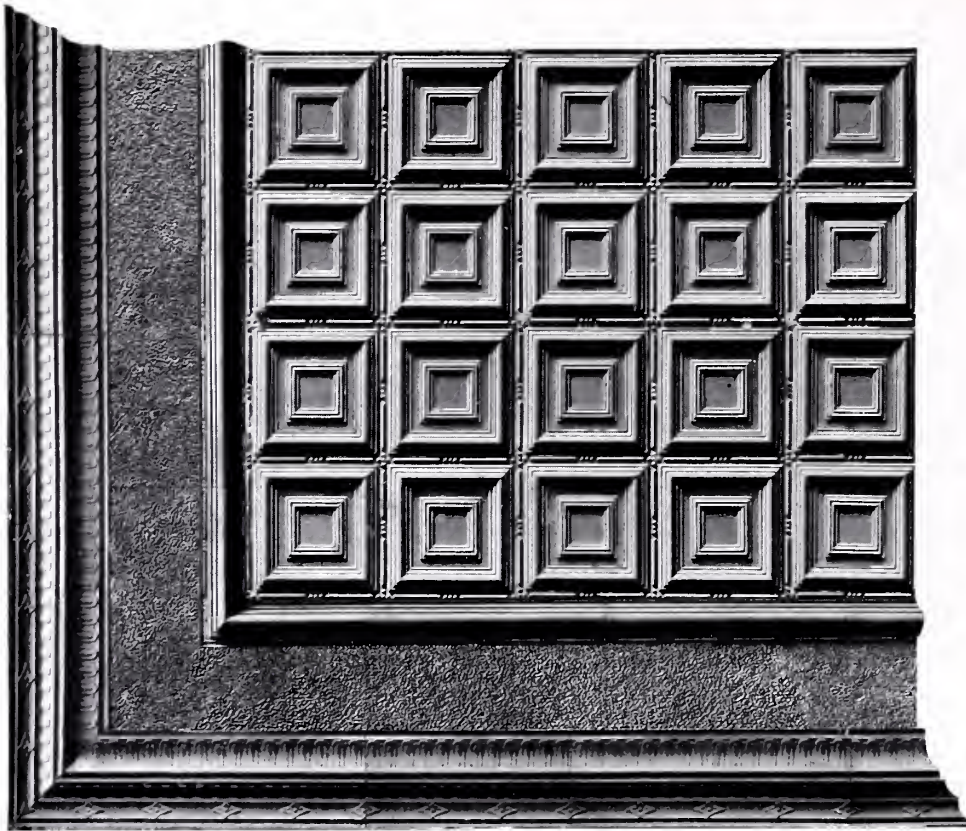
NEW ! *Spanish Texture* Metal Ceiling

The Latest Milcor Development

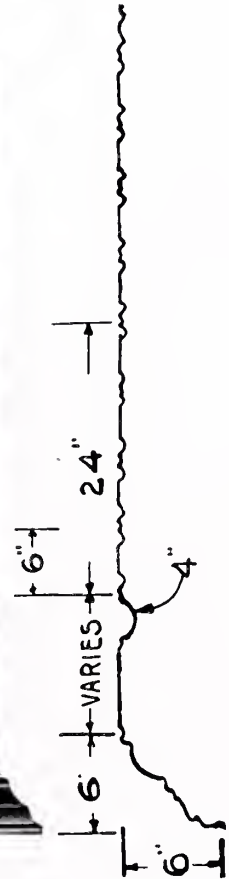
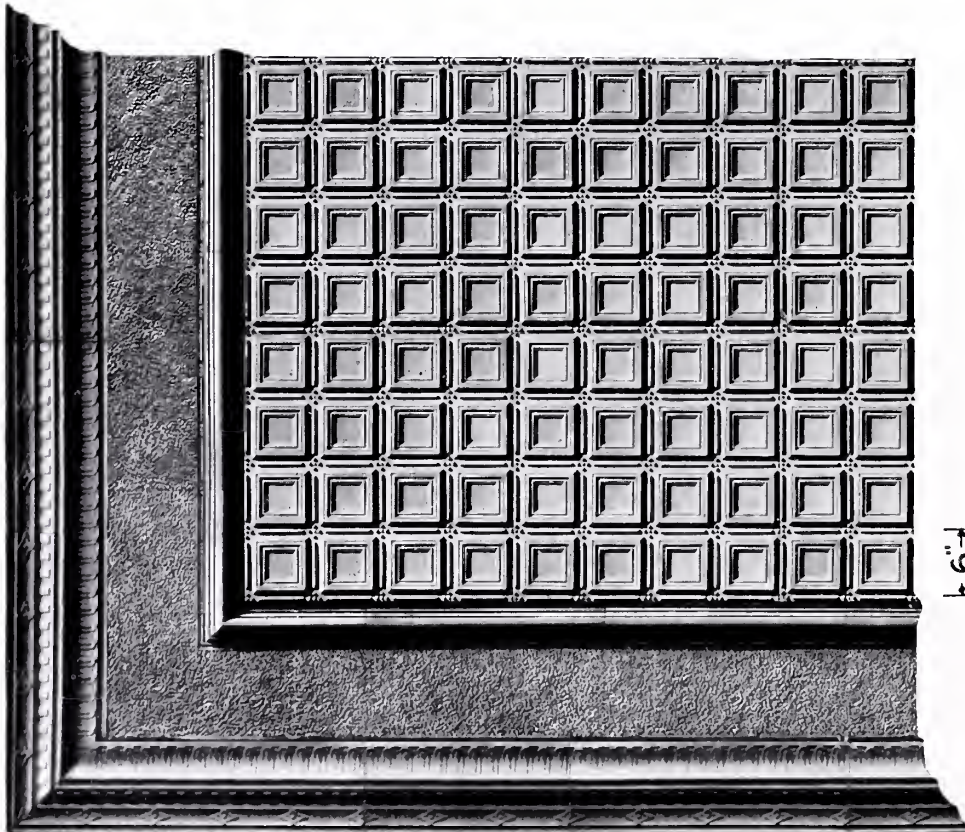
THE trend toward rough textured, color-toned walls and ceilings, suggesting the Spanish motif in architecture, has become universally popular. The new Milcor Combination Design No. 4000 meets this popular demand in the most satisfactory manner. The Field Plates match perfectly and the joints are not perceptible.

Detailed instructions for erection and for two-tone finishing are furnished.

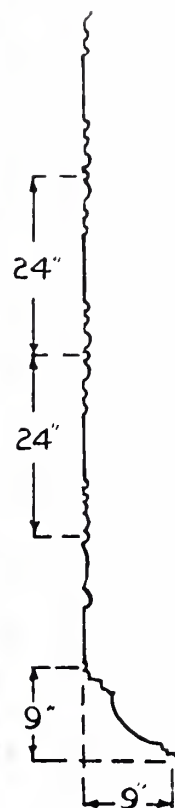
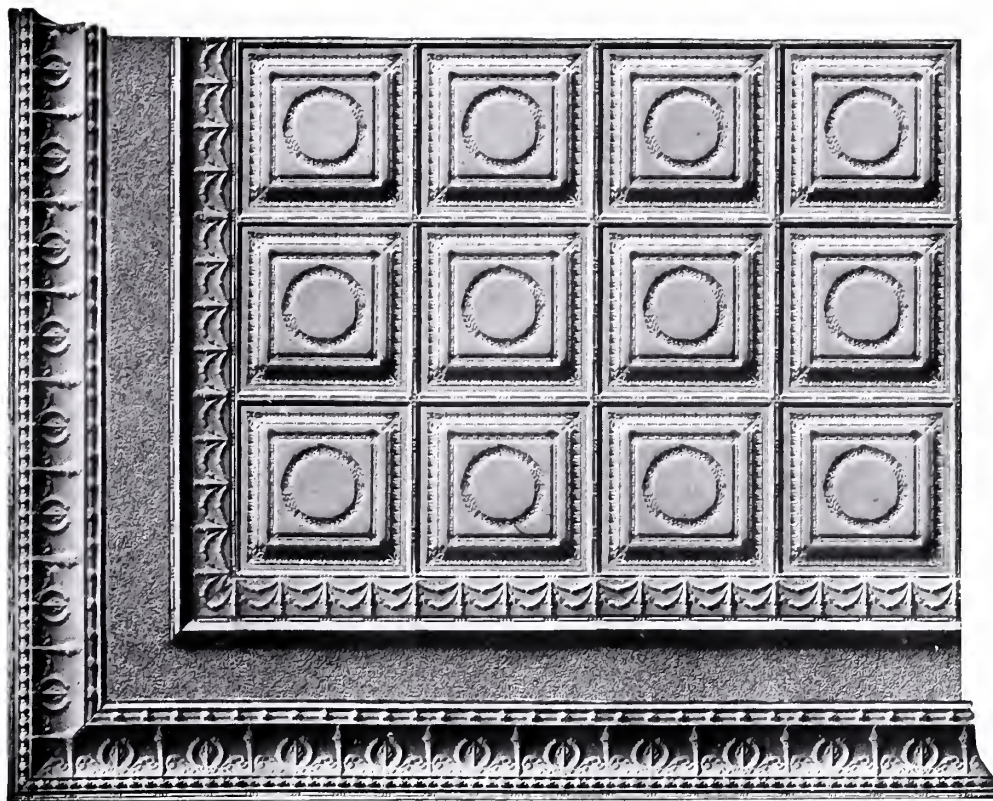
Spanish Texture COMBINATION DESIGN No. 4000, shown above, is composed of FIELD PLATE No. 4001 and CORNICE No. 4010. 2½" Projection 5" deep. Write for prices.



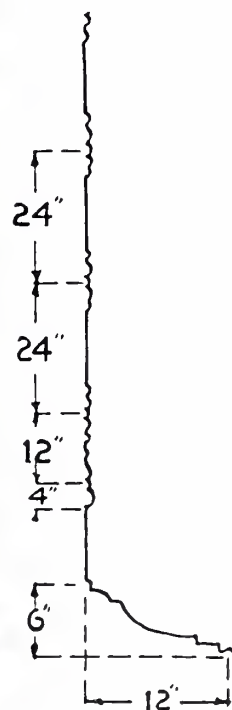
Colonial Design No. 2745— Cornice No. 2432
Molded Filler No. 2244
Field Plate No. 2225



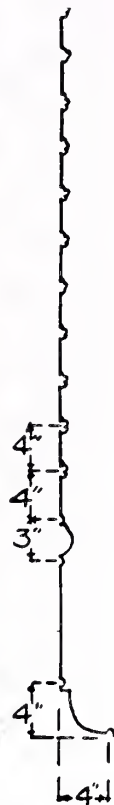
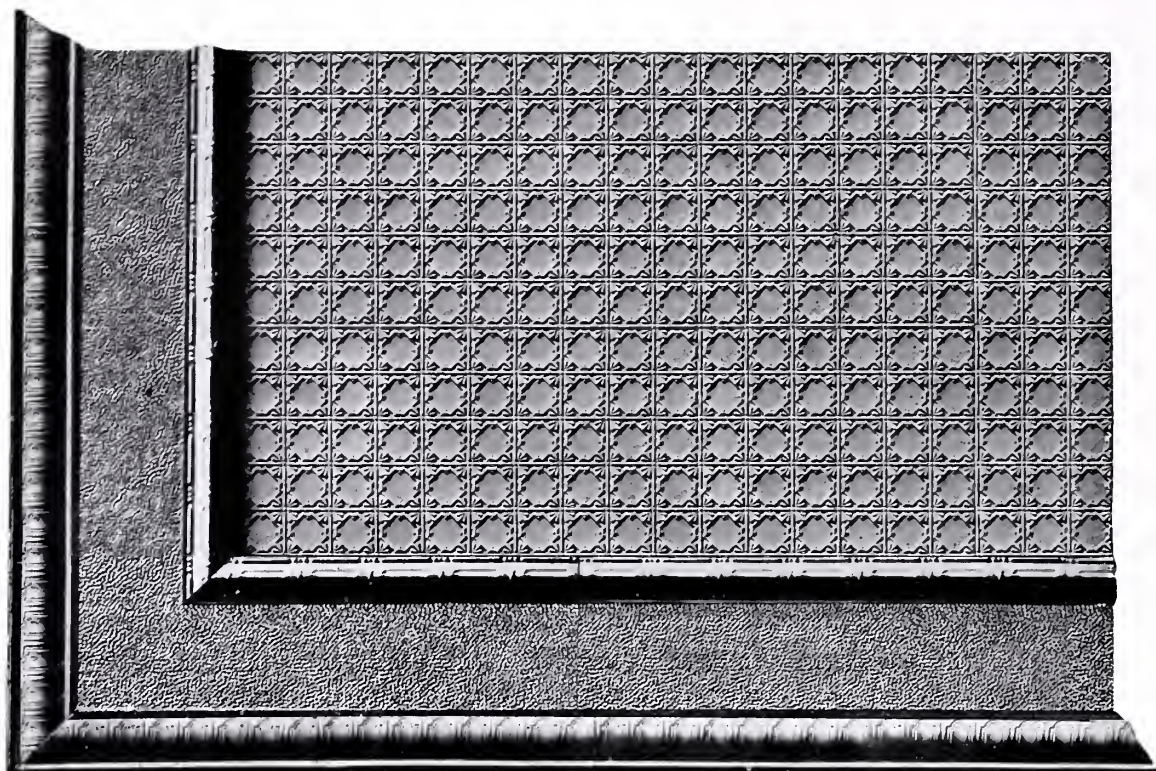
Colonial Design No. 2755— Cornice No. 2432
Molded Filler No. 2244
Field Plate No. 1926



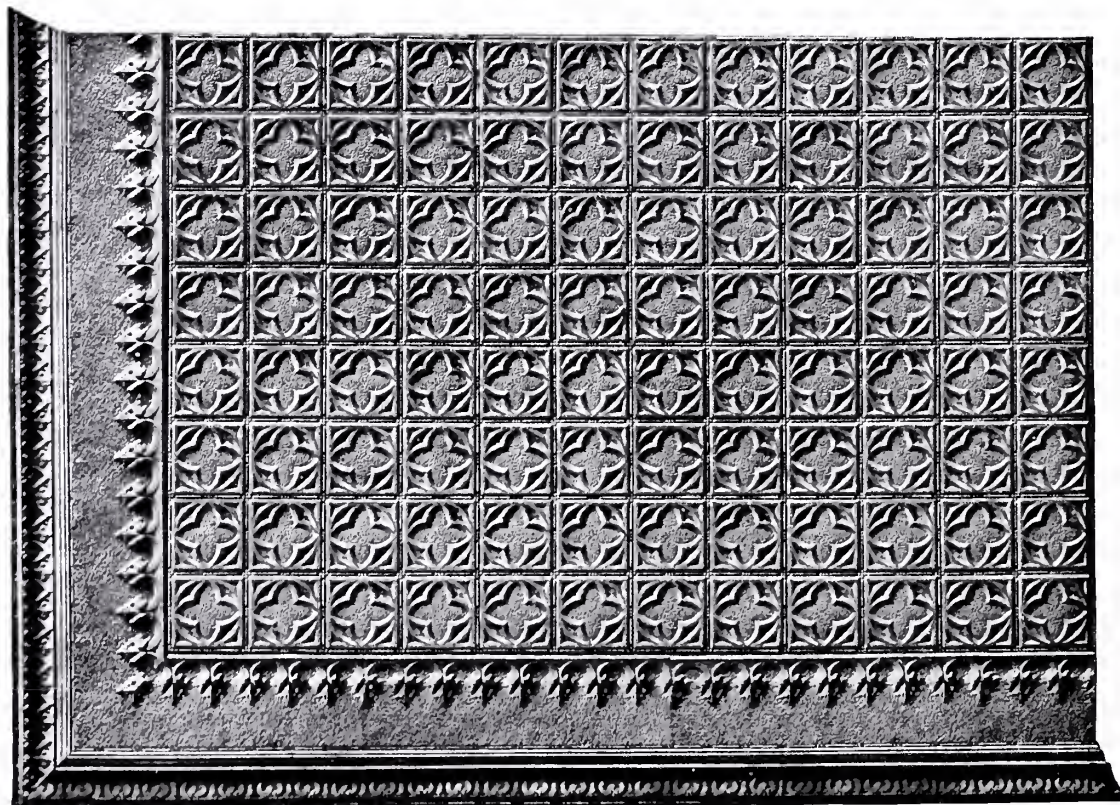
Colonial Design No. 1998 — Cornice, No. 1931.
Bordered Filler, No. 1941.
Field Plate, No. 1911.



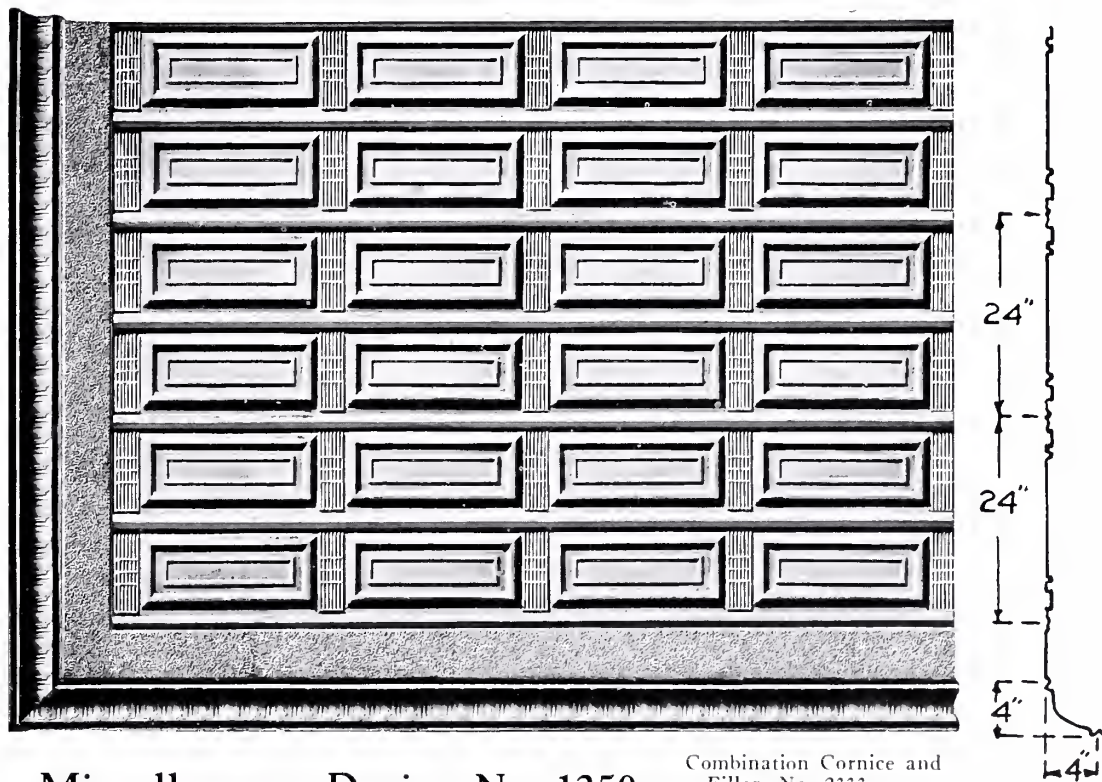
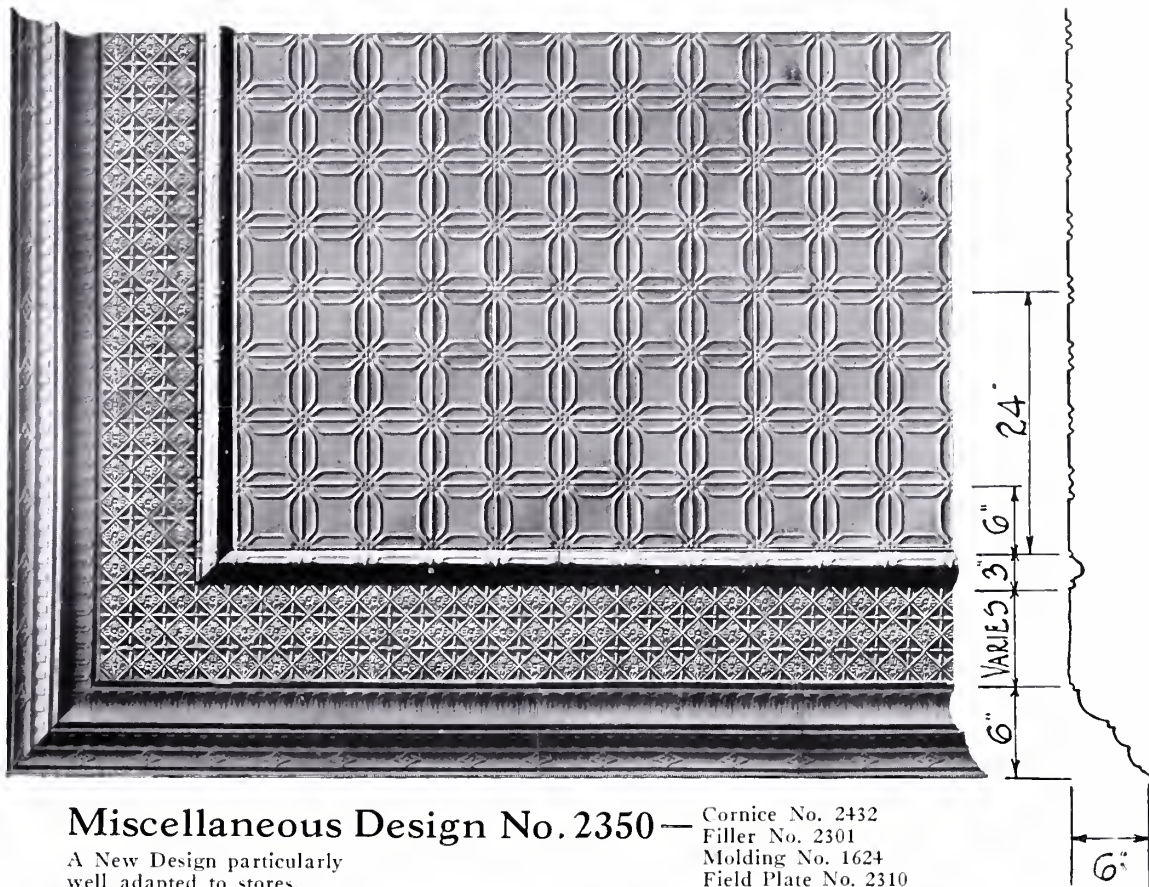
Grecian Design No. 2470 — Cornice, No. 2431.
Molded Filler, No. 2244.
Bordered Plates, No. 2400.
Field Plate, No. 2400.



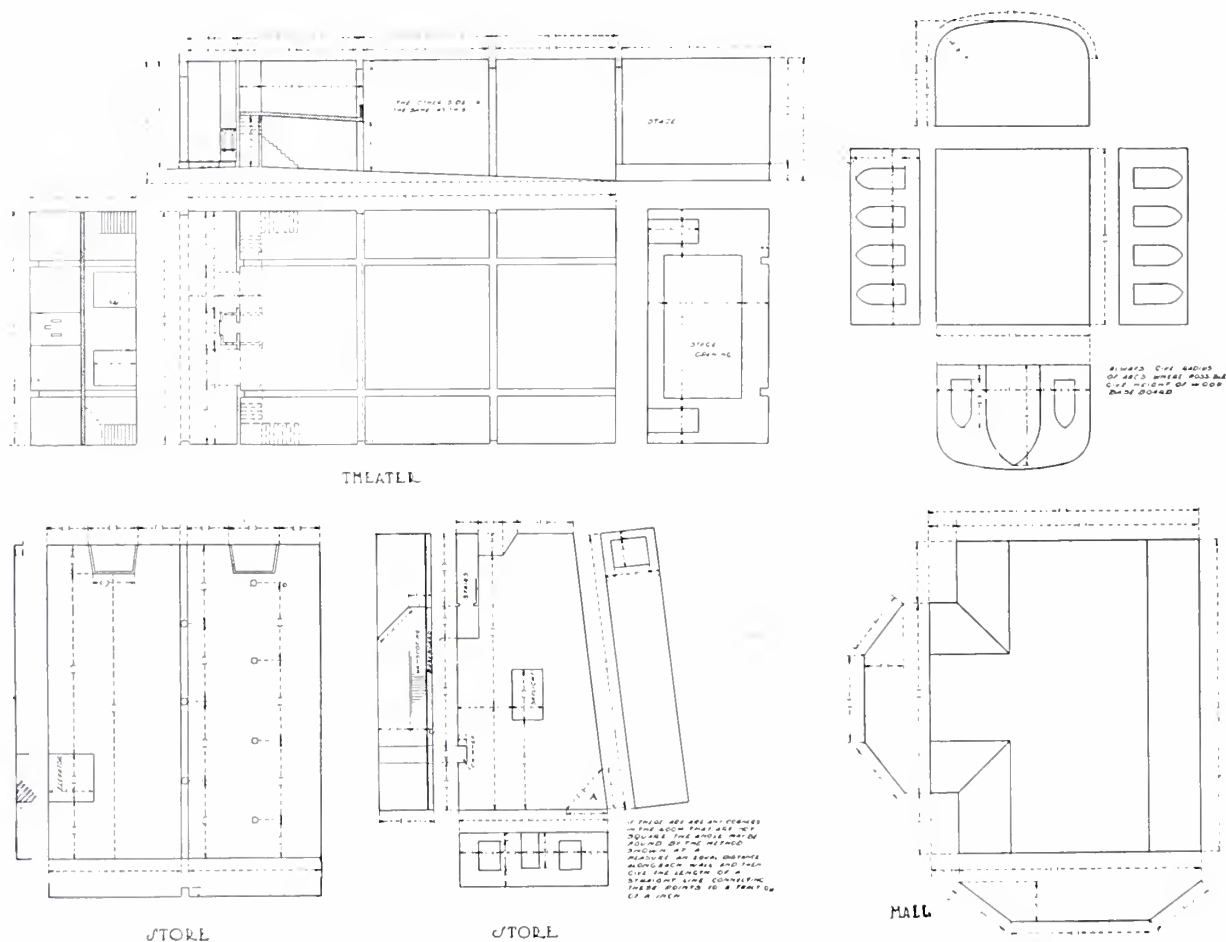
Residence Design No. 2374 — Cornice, No. 1150.
Molded Filler, No. 1744.
Field Plate, No. 2306.



Gothic Design No. 1795 — Cornice, No. 1731.
Molded Filler, No. 2041.
Field Plate, No. 1705.



Methods of Measuring Rooms for *MILCOR*, *"Invisible Joint"* Metal Ceilings and Sidewalls



THE diagrams above show the various measurements needed for different styles of ceilings. By following these fundamentals in making your measurements you will aid us in arranging appropriate combination designs.

When sending in measurements for metal ceilings or sidewalls, include a simple outline to indicate the shape and dimensions of the room. Drawings do not have to be made to scale—just give

exact measurements.

Also indicate the exact size and location of all offsets, such as chimneys, elevators, skylight openings, beams and stairways. State whether or not cornice may be used across front of room.

When estimating, do not make any deductions for skylight openings of less than 100 square feet, nor for stairways, chimneys or other openings or projections of less than 50 square feet.

How to Estimate Area of Ceiling

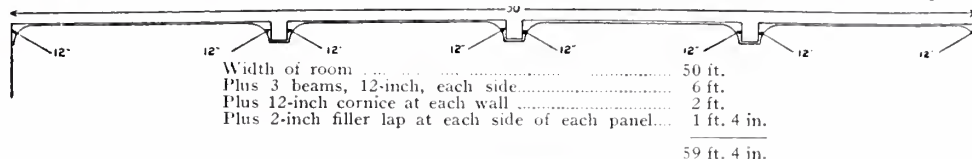
Add to the length of the room the depth of the cornice plus 2 inches for filler lap on both ends or wherever used.

Multiply this by the sum of the width of the room, depth of the cornice and 2-inch filler lap where used. For example: A room 26 x 54 feet, with 12-inch cornice on sides and ends, is figured as follows: (*See column to the right.*)

Length	54 feet
Plus 12-inch cornice on two ends.....	2 feet
Plus 2-inch filler lap on two ends.....	4 inches
	56 feet 4 inches
Width	26 feet
Plus 12-inch cornice on two sides.....	2 feet
Plus 2-inch filler lap on two sides.....	4 inches
	28 feet 4 inches

28 feet 4 inches × 56 feet 4 inches = 1596 square feet.

If rooms contain beams that must be covered, add for them as follows: (*See diagram and explanation here.*)



Our quotations and estimates will always include all sheet metal shown in the design specified, with one wood bracket cut to the profile of the cornices and moldings at

each lapping joint. The shipping weight of Milcor "Invisible Joint" Steel Ceilings is 65 lbs. per 100 square feet, crated. Accepted at fourth-class transportation rates.



Directions for Applying MILCOR "Invisible Joint" Metal Ceilings and Side Walls

A BLUEPRINT working drawing showing the arrangement of the various plates, is furnished with every ceiling. Itemized packing sheets giving quantity and catalog number and size of the material are also included.

The first thing to do when a shipment arrives is to check the number of packages with the bill of lading. The contents of each package should then be checked and counted against the packing sheet.

Check the measurements on the blueprint with the building. If any material is short in the crates, or the blueprint does not agree with the building, notify us at once before you start to erect the ceiling. After the material and blueprint are carefully checked, proceed as follows:

If possible, it is best to scaffold the whole room, but a movable scaffold may be used.

When ceiling is boarded or sheathed most of our designs can be applied directly to the sheathing. If the ceiling is plastered, wood furring strips must be employed, with exception of Plate No. 1200, shown on page 47, as it is not practical to apply other designs direct to lath or plaster. It is not necessary to remove old plaster, as the wood furring strips will hold it in place. If plaster is loose, extra strips should be placed where necessary.

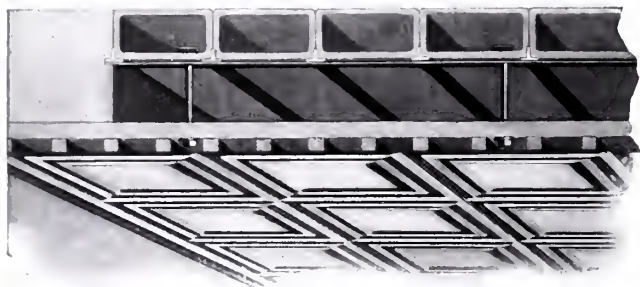
Follow the blueprint carefully and observe the starting point and center line. The starting point is not

always on the center line. Great care must be taken to make sure that the center line is in the exact center on both ends, as well as the middle of the room. Many rooms vary on the ends, so it is best to get the exact center on each end and strike a chalk line. This should be done lengthwise as well as crosswise of the room.

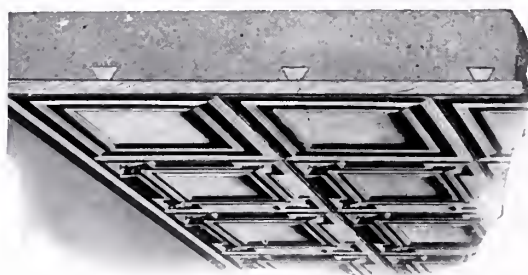
Observe whether plates start on the center line or not. If not, measure the proper distance on side of center line, and if wood strips are used, center the strips on this line. You then have the starting line one way of the building. The same operations are necessary the other way of the building.

On the plan, find the location of the starter plate. Observe the exact distance from the rear wall, and then, with the location of the starting line, you are ready to apply the field plates.

Strike a chalk line for each wood strip placed, taking care that the proper distance required will fit in the center of the strip. If the strips are put six inches on center for field plates, no cross furring is necessary. If placed twenty-four inches on center, cross furring is necessary every forty-eight inches, or on the end of every plate. The next step depends on the design and style of ceiling. If the design has a border around the field plates, this should be put on next. If a molding or molded filler is used, this can be applied next to the field plate or border.



Method No. 1



Method No. 2

If a center ornamentation filler is used, this should be applied after the field plate is in position and before placing the mold or cornice. Care should be taken to get this filler in the exact center of the space. The cornice generally projects more than the mold, so great care must be used in striking the chalk line of the cornice and molding. The balance of the space will be covered by the center ornamentation filler.

After this the molding is applied. This makes a finish on one side of the filler. The cornice is applied last and completes the ceiling. We furnish stamped one-piece mitres for all cornices of a depth of four inches or over for right-angle corners only. All irregular mitres must be cut by the erector. We send a sufficient amount of material to make these mitres, but cannot be

held responsible for any unnecessary waste of materials.

When iron girders are used in a building and are to be covered with metal ceiling, it is necessary to build woodwork around same to receive the ceiling, the construction of which will be shown on the drawing we furnish.

Ceiling plates cannot be arranged to accommodate gas and electric light drops; but all such drops must be placed to conform to our drawing and layout. Lights can be dropped from either the center or corner of the plate, which necessitates but very little change to get them to come about where they are wanted.

Side walls are easily applied. One-half inch sheathing or strips are used. If strips are used, they should be placed six to twelve inches on center.

Metal Ceilings as Applied to Concrete Construction

There is a growing demand for "Invisible Joint" Metal Ceilings for Cement or Concrete Buildings, especially in factory offices and show-rooms. Stucco designs, which are in architectural harmony with the cement work, are generally recommended. These ceilings are much less expensive than ornamental plaster work, fully as artistic and more dependable. Three methods of applying same are here shown.

Method No. 1

shows application of metal ceiling to building with concrete beams and book tile ceiling or roof. Toggle bolts are used to fasten the rods to the tile. $\frac{7}{8}$ by $1\frac{1}{4}$ -inch furring strips are fastened to these bolts to suspend the ceiling the proper height and regular furring strips applied crosswise, either 6 or 24 inches on center, according to the design. See illustration above.

Method No. 2

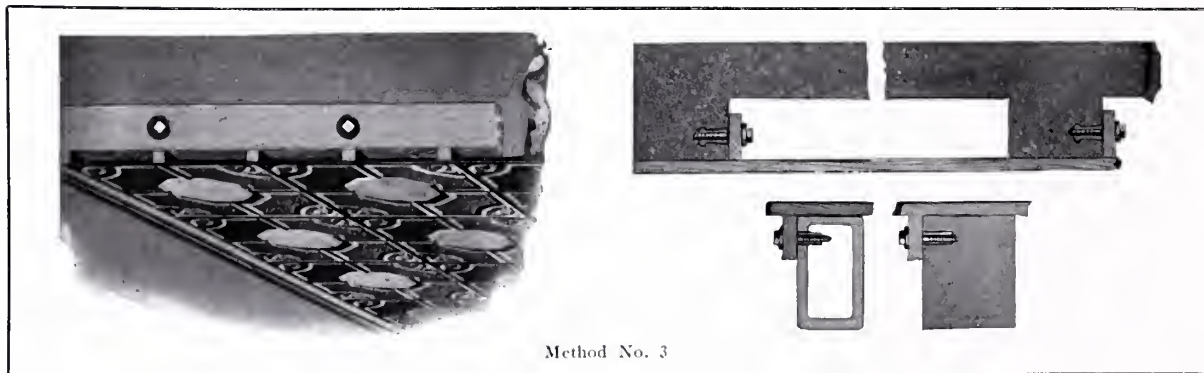
shows application of metal ceiling to concrete keyed wood strips, imbedded in the concrete when the floor is poured. $\frac{7}{8}$ by $1\frac{1}{4}$ -inch wood strips are nailed crosswise to the keyed strips, either 6 or 25 inches on center, according to the design.

Method No. 3

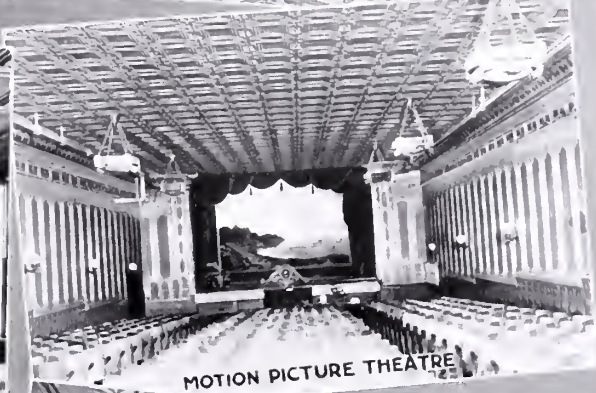
No. 3 shows method of attaching metal ceilings to the concrete beams. By this method high ceilings can be brought down even with the bottom of the beam.

Send Us Plans

and we will submit blueprints showing the best method of covering. We have made a study of this subject, so can furnish complete plans and practical information.

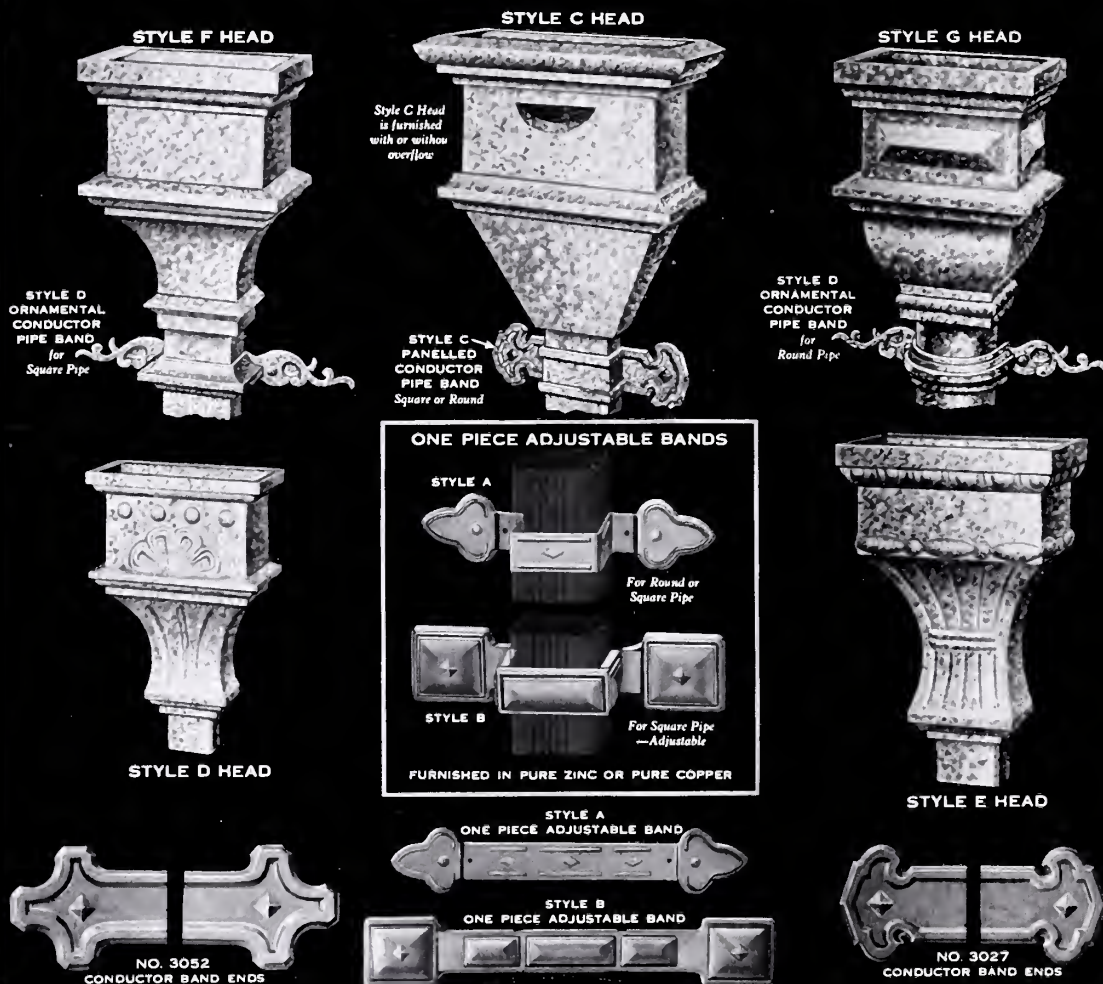


Method No. 3



A Few Installations Which Show the Wide Range of Adaptability of Milcor Invisible Joint Ceilings and Side Walls

MILCOR ORNAMENTAL CONDUCTOR HEADS AND BANDS



MILCOR Ornamental Conductor Heads and Bands.

MILCOR Ornamental Conductor Heads, Bands and Band Ends are made for either round or square Conductor Pipe and are furnished in galvanized Sheet Steel, galvanized "Coppered Metal", galvanized ARMCO Ingot Iron, Pure Zinc or Pure ANACONDA Copper.

The One Piece Adjustable Bands, Styles A and B, are furnished in Zinc or Copper, only. Style "A" can be used for either round

or square conductor pipe. Style "B" is made for square pipe only. Both styles permit adjustment to varying distances of space between the conductor and wall of building. When using Style B, the tinsmith simply slits the edges of the band and bends it at the desired points, after determining the width and depth required. Complete details and prices on request. These highly practical, artistic, efficient, economical, Adjustable Bands are becoming exceedingly popular.

Style C Heads— for Round or Square Pipe—with or without overflow.
 Style D Heads— for Round or Square Pipe—2", 3", 4", and 5".
 Style E Heads— for Round or Square Pipe—2", 3", 4", and 5".
 Style F Heads— for Round or Square Pipe—3", 4", 5", and 6".
 Style G Heads— for Round or Square Pipe—3", 4", 5", and 6".

Style D Ornamental Bands can be made for Round or Square Pipe of any size.
 Style C Panelled Bands can be used for Round or Square Pipe of any size.
 No. 3027 Conductor Band ENDS are 4½ x 4½ inches each.
 No. 3052 Conductor Band ENDS are 5 x 6 inches each.



No. 3101
Size, 32 x 30 inches.



No. 3102
Size, 32 x 30 inches.



No. 3058
CRESTING 25" x 30" ORNAMENT



CARTOUCHE
No. 3085
16 x 24 inches



Rosette—No. 3119
8 x 9½ inches.



CARTOUCHE
8 x 10 inches.
No. 3043

TO meet architectural needs for decorative details on various types of buildings, we have designed and produced thousands of artistic metal ornaments, a few of which are shown here. The dies for these ornaments are at our Milwaukee Plant and we can make up any of these designs quickly in Zinc or Copper.

Society Emblems in metal, for interior or exterior decoration, are available in various sizes.

Architects, Contractors or Builders who desire some idea of their own in metal ornaments, will find that our expert modelers can reproduce even the most elaborate designs, in a manner that will please the most critical.

We solicit your consideration of our excellent facilities for this work and we can assure you of very satisfactory service.

ABC

No. 3651 All Letters in Alphabet
Sizes 5 x 8 inches
6 x 8 inches
4 x 6 inches
3 x 4 inches

1905

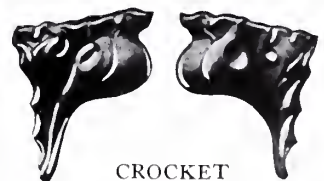
No. 3650
FIGURES
Sizes 6 x 8 inches
4 x 6 inches



URN—No. 3160
Height 38"—Diam. 17".



No. 3060 CARTOUCHE
20 x 27 inches.



CROCKET
No. 3039—3½ x 3½
No. 3037—6 x 8
No. 3525—9 x 10



No. 3700. EGG AND DART MOULDING, 1 1/2 inches wide.



No. 3701. EGG AND DART MOULDING, 2 inches wide.



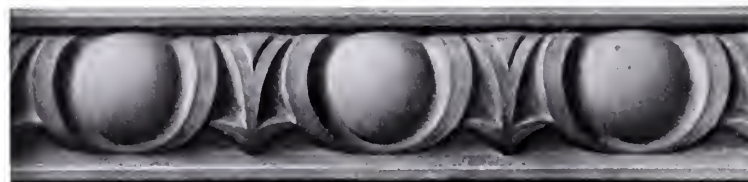
No. 3702. EGG AND DART MOULDING, 2 1/2 inches wide.



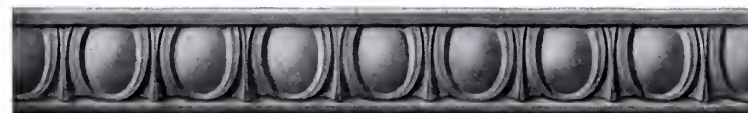
No. 3703. EGG AND DART MOULDING, 5 inches wide.



No. 3704. EGG AND DART MOULDING, 7 1/2 inches wide.



No. 3146. EGG AND DART MOULDING, 5 1/4 inches wide.



No. 3110. EGG AND DART MOULDING, 2 1/2 inches wide.



No. 3127. EGG AND DART MOULDING, 3 inches wide.



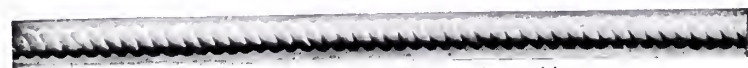
No. 3104. SHEEP'S TONGUE MOULDING, 4 inches wide.



No. 3105. BEAD MOULDING 2 inches wide.



No. 3750. ROPE MOULD. 1 inch wide.



No. 3751. ROPE MOULD. 2 inches wide.



No. 3752. BEAD MOULD. 1 1/2 inches wide.



No. 3026
ORNAMENTAL
SPOUT OUTLET
For 2 and 3 inch Pipe.



No. 3585
LION HEAD
11 x 12 inches.



No. 3033
LION HEAD
8 x 10 inches.
3 1/2 inch
Projection



No. 3032
LION HEAD
5 x 5 1/2 inches.



No. 3045
WREATH
5 x 6 1/2 inches.



No. 3600
WREATH
18 x 20 inches.



No. 3400. SCROLL.
Right, 4 x 9 inches.
Left, 4 x 9 inches.



No. 3401. SCROLL.
Right, 5½ x 10 inches.
Left, 5½ x 10 inches.



No. 3402. SCROLL.
Right, 3 x 8 inches.
Left, 3 x 8 inches.



No. 3403. SCROLL.
Right, 11 x 12 inches.
Left, 11 x 12 inches.



No. 3404. SCROLL.
Right, 9 x 11 inches.
Left, 9 x 11 inches.



No. 3405. SCROLL.
Right, 4½ x 12 inches.
Left, 4½ x 12 inches.



No. 3406
SCROLL—Right.
7 x 15 inches.

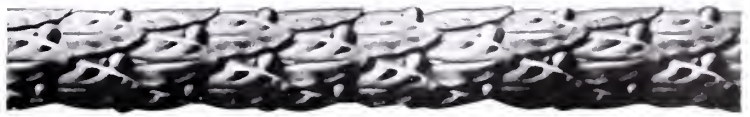
No. 3406
SCROLL—Left.
7 x 15 inches.



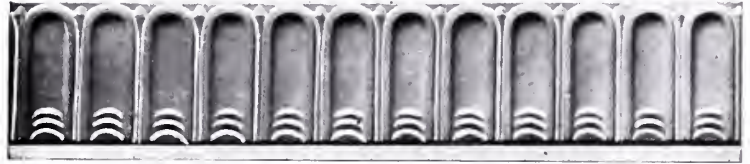
No. 3065
SCROLL
Right, 2¼ x 7½ inches.
Left, 2¼ x 7½ inches.



No. 3409. SCROLL—Right or Left. 12 x 36 inches.



No. 3758. MOULDING. 5½ inches wide. Nearly half round.



No. 3756. ENRICHMENT. 9 inches wide.



No. 3018. ENRICHMENT. 6 inches wide.



No. 3134 ENRICHMENT—5¾ inches wide.



No. 3753. ENRICHMENT. 5 inches wide.



No. 3754. ENRICHMENT. 4½ inches wide.



No. 3757. ENRICHMENT. 3 inches wide.



No. 3063
RIBBON BOW
4½ x 14 inches.



No. 3034
ORNAMENT
4½ x 11 inches.



No. 3410 SCROLL—Right or Left: 12½" x 17½".



No. 3411
SCROLL

Left, 6 x 16 inches. Right, 6 x 16 inches.



No. 3072
SCROLL

Left, 5 x 13 inches. Right, 5 x 13 inches.



No. 3181
SCROLL

Left, 6 x 15 inches. Right, 6 x 15 inches.



No. 3053
SCROLL

Left, 5" x 11½". Right, 5" x 11½".



No. 3408
SCROLL

Right, 6 x 12 inches. Left, 6 x 12 inches.



No. 3055
RIBBON

Right, 6 x 18 inches.

Left, 6 x 18 inches.



No. 3205. BRANCH. 10 x 20 inches.



No. 3407
SCROLL
11 x 14 inches.



GARLAND

No. 3035—13 x 45 inches, in parts.

No. 3036—16 x 56 inches, in parts.



No. 3550
GARLAND
10 x 20 inches.



No. 3551
GARLAND
12 x 27 inches.



No. 3552
GARLAND
9 x 26 inches.



No. 3553
GARLAND
12 x 43 inches.



No. 3057. GARLAND. 9 x 40 inches.



No. 3061
GARLAND
15½ x 16½ inches.



No. 3054. CRESTING—4 inches wide.



No. 3176. CRESTING—7½ inches high.



With or Without Background.
No. 3064. CRESTING—10 inches wide.



With or Without Background.
No. 3049. CRESTING—5 inches wide.



No. 3175. CRESTING—18 inches high.



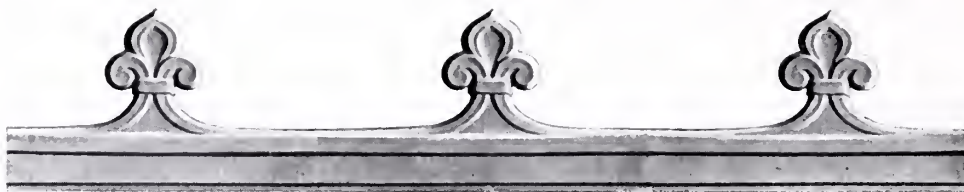
No. 3182. CRESTING—18 inches high.



No. 3180. CRESTING—18 inches high.



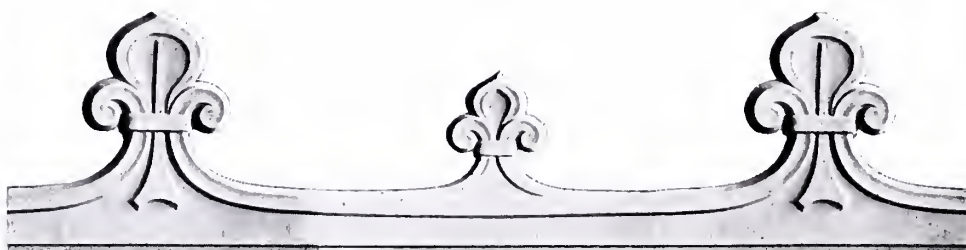
No. 3112. CRESTING—12 inches high.



No. 3107 CRESTING—13 inches high. Design 24 inches on center



No. 3108 CRESTING—18 inches high. Design 24 inches on center.



No. 3109 CRESTING—18 inches high. Design 24 inches on center.



No. 3755 CRESTING—7½ inches wide.



Left Outside
Corner for
No. 3136 Cresting

No. 3136 CRESTING
7 inches high.

Right Outside
Corner for
No. 3136 Cresting

See Installation View on Page 45



Left Outside
Corner for
No. 3164 Cresting

No. 3164 CRESTING—14 inches high
With Center Ornament 28 inches high.

Right Outside
Corner for
No. 3164 Cresting



No. 3086. CRESTING—16 inches wide.

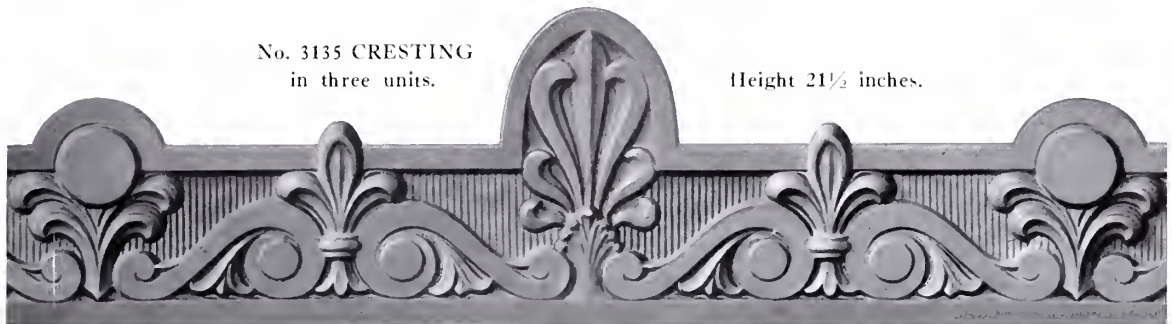
Since it is impossible to illustrate in this small book all of the designs in sheet metal that we have been called upon to produce, we ask that architects and builders submit their plans or ideas to us for suggestions and estimates. Milcor designers and modelers will gladly submit interpretations of appropriate sheet metal details for any building.



No. 3177. CRESTING—21 inches high.

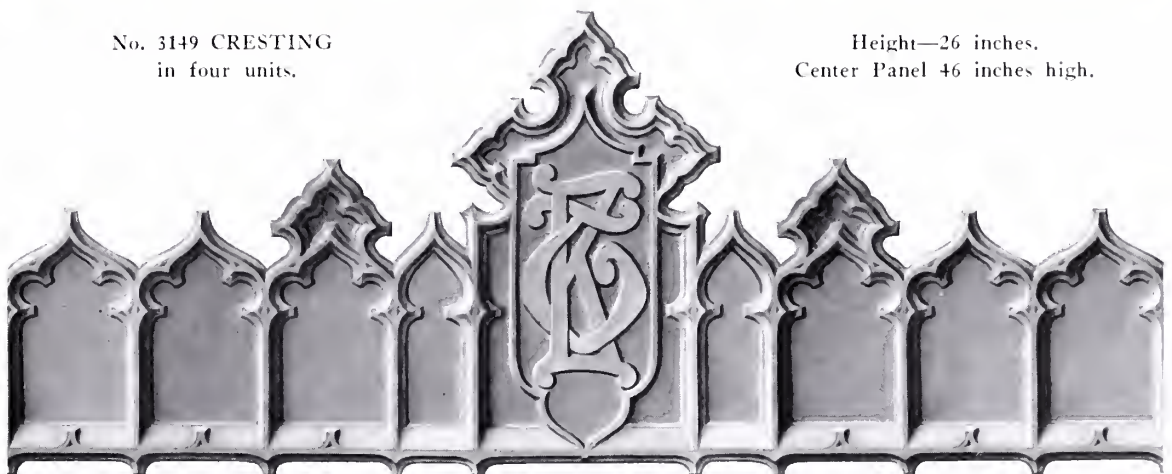


OUTSIDE CORNERS FOR
No. 3135 Cresting. Height 21½"



No. 3135 CRESTING
in three units.

Height 21½ inches.



No. 3149 CRESTING
in four units.

Height—26 inches.
Center Panel 46 inches high.



No. 3114, BRACKET SIDES—Left and Right—17 x 37½ inches.



No. 3070 LYRE
20 x 32 inches.



Left 12" x 19".



Right 12" x 19".

No 3115 ORNAMENT



No 3044 ORNAMENT
22 x 30 inches.



No. 3575, PANEL—9 x 26 inches.



No. 3029, LYRE. 20½ x 26½ inches.



No. 3056
DROP
6½ x 11 inches.



No. 3042
DROP
1½ x 15 in.



No. 3050
CRESTING
ORNAMENT
4 x 7 inches



No. 3051
CRESTING
ORNAMENT
6 x 9 inches



No. 3625 GABLE—22 x 48 inches.

Various sizes made to order.



No. 3165 CONTINUOUS FRIEZE—20 inches high—Left and Right.



No. 3241
ORNAMENT
3 x 7 inches.



No. 3300
FINIAL TOP
5 x 7 inches.



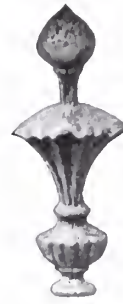
No. 3301
FINIAL TOP
5 x 9 inches.



No. 3302
FINIAL TOP
4 x 10 inches.



No. 3303
FINIAL TOP
4½ x 12 inches.



No. 3031
FINIAL TOP
7 x 8 inches.



No. 3304
FINIAL TOP
4 x 18 inches.



No. 3067
ORNAMENT
12 x 20 inches.

No. 3144
GARGOYLE
Right, 11 x 17 inches.

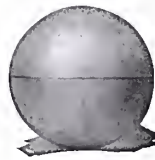


No. 3138
CARTOUCHE—9 x 11½ inches.

No. 3144
GARGOYLE
Left, 11 x 17 inches.



No. 3652
SPUN HALF BALLS
All Sizes.
Zinc and Copper.



No. 3075 COMPLETE BALLS
Locked together and seamed on inside.
Made in Tin and Copper, in two sizes,
2½ inch and 3½ inch.



No. 3030
TWISTED
TOP
6 x 18 inches.



No. 3163 BALUSTER
Height 38", Diameter 8"



No. 3117
BALUSTER
Height 19"
Diameter 8"

See also Page 59
for No. 3159 URN



No. 3116
BALUSTER
Height 15¼"
Diam. 5"



No. 3500
BALUSTER
Height 14"
Diam. 5"



No. 3139
BALUSTER
Height 21"
Diameter 6"



No. 3160 URN
Height 38", Diameter 17"



No. 3168 FRIEZE ORNAMENT—Height 28 inches. Overall length 78 inches.



No. 3023
ROSETTE
Diam. 1½ in.



No. 3022
ROSETTE
Diam. 3 in.



No. 3071
ROSETTE
Diam. 3 in.



No. 3000
ROSETTE
Diam. 3 in.



No. 3021
ROSETTE
Diam. ¾ in.



No. 3001
ROSETTE
Diam. 4 in.



No. 3002
ROSETTE
Diam. 4 in.



No. 3020
ROSETTE
Diam. 4 in.



No. 3003
ROSETTE
Diam. ½ in.



No. 3017
ROSETTE
Diam. ½ in.



No. 3006
ROSETTE
5 x 5 inches.



No. 3016
ROSETTE
Diam. 5 in.



No. 3004
ROSETTE
Diam. 5½ in.



No. 3005
ROSETTE
Diam. 5½ in.



No. 3007
ROSETTE
6 x 6 inches



No. 3010
ROSETTE
7 x 7 inches.



No. 3015
ROSETTE
Diam. 8 in.



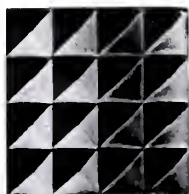
No. 3008
ROSETTE
½ x 8 inches.



No. 3009
ROSETTE
6 x 10 inches.



No. 3012
ROSETTE
12 x 12 inches.



No. 3013
ROSETTE
12 x 12 inches.



No. 3011
ROSETTE
Diam. 12 in.



No. 3014
ROSETTE
Diam. 15 in.



No. 3173
CARTOUCHE
¾ x ½"



No. 3172
ORNAMENT
1⅞" x 2¾"



No. 3171
ORNAMENT
2¾" x ¾"



No. 3167 ROSETTE
Diam. 18 in.



No. 3232
FLUTED ORNAMENT
12 x 26 inches



No. 3170
ORNAMENT
2¾" x ¾"



No. 3100
SHELL
4 x 4½ inches.



No. 3038
SHELL
1¼ x 2 inches



No. 3201
ROSETTE
Diam. 6 in.
Diam. 5 in.
Diam. 4 in.



No. 3230
FLUTED ORNAMENT
7 x 8 inches.



No. 3240
FLUTED TOP
8 x 8½ inches.



No. 3231
FLUTED ORNAMENT
7 x 9 inches.



No. 3225
FLUTED BALL
Diam. 8 in.



No. 3226
FLUTED BALL
Diam. 9 in.



No. 3150
LEAF
3½ x 7 in.



No. 3151
LEAF
3 x 4½ in.



No. 3152
LEAF
2 x 6½ in.



No. 3153
LEAF
5 x 12 in.



No. 3156
LEAF
6 x 15 in.



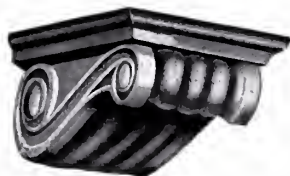
No. 3155
LEAF
9 x 13 in.



No. 3157
LEAF
4 x 8 in.



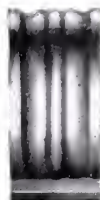
No. 3154
LEAF
5 x 12 in.



No. 3019
BRACKET
Projection 14 inches,
Height 8 inches,
Face 8 inches.



No. 3200
MODILLION
5-inch face, 5½
inches deep, 12-inch
projection.



No. 3040
BRACKET
FACE
4 x 9 inches.

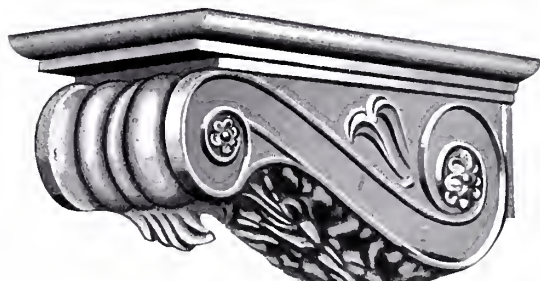


No. 3041
BRACKET
Projection 12 inches,
Height 7 inches,
Face 7 inches.

BELOW: No. 3130
BRACKET
Height: 6¼ inches
Face: 4 inches
Projection: 9½ inches



No. 3158
PEDIMENT
Length 19½"
Height 7¼"
Width 4"



No. 3025. BRACKET.
Projection 25 inches. Height 10 inches.
Face 12 inches.



No. 3140 CAPITAL
Height: 2½ inches
Neck: 1 inch.
Abacus: 3¼ inches



No. 3145 CAPITAL
Height: 10 inches
Neck: 6 inches
Abacus: 12 inches



No. 3174 CAPITAL
Height: 11¼ inches
Face: 7½ inches
Abacus: 12 inches



No. 3166 CAPITAL
Height: 13½ inches
Pilaster Face: 7 inches



No. 3595
CAPITAL
Neck 9 in. Height 15 in.
Abacus 16 inches.



No. 3047
CAPITAL
Three Sizes
Neck: 8", 6", or 4"
Height: 8", 6", or 4"
Abacus: 12", 9", or 6"



No. 3047
CAPITAL
Neck 6 in. Height 6¼ in.
Abacus 9¾ inches.



SUMMER FRONT for FIREPLACE

Milcor Designing Service

You may bring your ornamental sheet metal problems to Milcor designers with the assurance that they will be solved tastefully and well. Out of a wealth of experience, covering the designing and modelling of architectural details for all types of buildings, we have developed a service to architects which many of them use frequently. Come to Milcor designers for help.



No. 3095—Diameter 20 inches.

Emblem Plates

We have ready for immediate use dies of all popular society and lodge emblems which we can produce in separate form for wall or Marquee decoration, as shown on this page, or we can work them into metal ceiling or wall plates. Both may be made very attractive and different. We also have medallion plates of George Washington, Abraham Lincoln and other famous Americans. These may be of Copper or Steel.



No. 3069. Diameter 32 inches.

Metal Ornaments

Our designers are constantly producing new decorative architectural details for various types of buildings and our modelers carrying out the individual ideas of architects and contractors in designs for metal ornaments of different kinds. We are glad to open this special service to your direction, to the end that you secure the most fitting ornaments for your building. Write for our suggestions.



No. 3089
Size, 18 x 18 inches.



Society and Lodge Emblems in All Sizes.



No. 3091
Size, 16 x 14½ inches.



No. 3093
Size, 18 x 18 inches.



No. 3090
Size, 18 x 18 inches.



No. 3095
Size, 18 x 18 inches



No. 3092
Size, 18 x 18 inches.

ON the Ardmore Apartment Hotel, Milwaukee, the architectural sheet metal work by Milcor is a fine example of excellent adaptation of stock designs with some specially designed ornaments. The Cresting shown at the right is Milcor design No. 3182. The Urns and Spires were specially designed.

Below is another Milcor stock design Cresting No. 3164 on the exclusive Shorecrest Hotel, Milwaukee.



THIS night scene of Gimbel's, Milwaukee department store, shows Milcor ornamental copper panelling (indicated by the arrows).



By using Milcor copper architectural ornaments in this building, \$7,500.00 was saved over the original plans, and the general effect is more artistic, permanent and safe.

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